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REDUCING THE USE OF SECLUSION AND RESTRAINT IN SEGREGATED
SPECIAL EDUCATION SCHOOL SETTINGS THROUGH IMPLEMENTATION OF
THE COLLABORATIVE PROBLEM SOLVING MODEL

A Dissertation

Submitted to the School of Education

Duquesne University

In partial fulfillment of the requirements for
the degree of Doctor of Education

By

BethAnn Glew

May 2012

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BethAnn Glew

2012

Duquesne University
School of Education
Interdisciplinary Doctoral Program for
Educational Leaders

Dissertation

Submitted in Partial Fulfillment of the Requirements
For the Degree of Doctor of Education (Ed.D.)

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January 9, 2012

REDUCING THE USE OF SECLUSION AND RESTRAINT IN SEGREGATED SPECIAL
EDUCATION SCHOOL SETTINGS THROUGH IMPLEMENTATION OF THE
COLLABORATIVE PROBLEM SOLVING MODEL

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ABSTRACT

REDUCING THE USE OF SECLUSION AND RESTRAINT IN SEGREGATED SPECIAL EDUCATION SCHOOL SETTINGS THROUGH IMPLEMENTATION OF THE COLLABORATIVE PROBLEM SOLVING MODEL

By

BethAnn Glew

May 2012

Dissertation supervised by Launcelot Brown, Ph.D.

The intent of this study was to determine whether implementation of the Collaborative Problem Solving (CPS) model, that has proven successful in psychiatric settings, was equally effective in reducing restrictive practices in public school settings. Many peer-reviewed, published reports suggest that educators are poorly prepared to manage the extremely challenging behaviors of aggression and non-compliance, which are common in students classified with an emotional disturbance (ED). Too often educators rely on ineffective, potentially harmful interventions such as seclusion and restraint, which adversely impact students as well as staff.

The nonrandom sample was comprised of students enrolled in two segregated special education schools located in large communities in northwestern Pennsylvania.

The enrollment was 69 students in School A and 26 students in School B. The schools serve students, kindergarten through twelfth grade. All students were evaluated and classified as ED by their referring home school district as per Chapter 14 Regulations of the Pennsylvania Department of Education and received one-hundred percent of their special education program in this restrictive school-based environment.

This study used a quasi-experimental, pre-test-post-test research design and used two separate existing electronic data sources to test for relationships between the implementation of the CPS model and identified variables (standardized measures of externalizing maladaptive behaviors, incidents of aggression, noncompliance, and disruption, as well as incidents and duration of seclusion and restraint). The analyses included frequency comparisons, a series of Wilcoxon Signed Rank Tests, a series of dependent samples T-tests, and two-way repeated measures analyses of variance.

Implementation of the model reduced the incidents of aggression, noncompliance, and disruption, as well as incidents and duration of seclusion and restraint. However, only one of the schools in the study demonstrated a statistically significant reduction of aggression incidents and the use of restraint procedures. The results suggest that when implemented with fidelity, the research-based CPS model is a promising, preventative behavior approach for students classified with ED in a segregated special education school.

Key words: seclusion, restraint, emotional disturbance, aggression, noncompliance, Collaborative Problem Solving model

DEDICATION

I dedicate this dissertation to my late mother, Rosemarie Z. Spicer, and my late grandparents, Marie and Edward Zoglmann. I hold their memories close to my heart.

I also dedicate this study to educators working in public school settings who make a difference in children's lives every day.

ACKNOWLEDGEMENT

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Last but certainly not least, I must acknowledge my heart's delight, my daughter, Madison, and my one true love and most adamant supporter, my husband, Dr. Michael C. Glew. I am forever yours.

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CHAPTER 1

INTRODUCTION

I invite you to attend a school meeting. The location of this meeting is a K-12 segregated school exclusively designed for students eligible for special education in the category of emotional disturbance (ED). This special education program center serves approximately 60 students from neighboring school districts. Imagine that a few minutes after the meeting starts, you hear in the distance a child screaming in apparent emotional distress. The sound becomes progressively louder and draws nearer. You look through the doorway and see a middle-school student between two large, adult males who are forcibly escorting the student to an isolated room at the other side of the building. A door slams shut. The screaming continues but now it's slightly muffled. With a pounding heart and trembling hands, you turn back to the meeting...

The incident described is not uncommon today in Pennsylvania's schools. Seclusion and physical restraint (S/R) are two restrictive behavioral intervention techniques used in the public school setting when a student is considered to be a danger to self or others. In Pennsylvania, these restrictive procedures are viewed as a last resort emergency response to be used only after other less restrictive measures, including de-escalation techniques, have been used (Pennsylvania Department of Education [PDE], 2009). However, despite current Pennsylvania guidelines for use of restrictive procedures, Ryan and Peterson (2004) cite examples of the misuse of restrictive interventions for purposes other than safety, such as student noncompliance with adult demands. This research supports previous reports that office discipline referrals were

primarily related to noncompliance and disrespect, not threatened safety (Skiba, Peterson, & Williams, 1997).

In 2008, Pennsylvania's Bureau of Special Education (BSE), in conjunction with recommendations from the Special Education Advisory Panel (SEAP), developed the Restraint Information System of Collection (RISC) to monitor incidents of restraint in school districts across the Commonwealth. In 2009, the system was enhanced to provide a secure web-based system. The summation of the 2008-2009 RISC report indicated the following: 5,232 restraint incidents involving 1,228 students; the disability category in which the highest number of restraints was applied was ED; 129 incidents of student injury during a restraint; and 60 referrals were made to law enforcement as a result of restraint (PDE, 2010). The summary report for 2009-2010 (Pennsylvania State Education Association [PSEA], 2011) suggested a considerable increase in the use of restraints compared to the previous year. The number of occurrences in which some form of restraint was used was 10,373 and the number of students involved in these incidents nearly doubled to 2,349. Similarly, ED continues to be the disability category with the highest number of restraint incidents. The number of students injured during a restraint rose from 129 to 329; and the number of referrals made to law enforcement as a result of restraint more than tripled from 60 to 192. Of the 10,373 restraints, 22 percent occurred in school-based district/charter school programs while 78 percent took place in other school settings such as private placements.

Statement of the Problem

It is critical for special educators who work with students with ED to possess highly developed skills in order to plan and implement instructional programs that

consider the relationship between behavioral challenges and academic achievement (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). Students with ED typically do not respond well to conventional, long-established behavioral techniques and moreover, these interventions have been found to exacerbate student resistance, staff-student power struggles, and aggressive behavior (Epstein & Saltzman-Benaiah, 2010). School staff frequently lack advanced training regarding effective behavioral interventions that are crucial for the prevention of eruptions commonly manifested by children with severe behavioral problems (Ryan, Peterson, Tetreault, & Vander Hagen, 2007a). In instances where traditional behavior interventions are unsuccessful and staff lack ED specific, evidenced-based behavioral practices in their instructional repertoire, Costenbader and Reading-Brown (1995) noted that educators often resort to increasingly restrictive procedures on the continuum of behavior reduction techniques to manage physical aggression (Crocker, Stargatt, & Denton, 2010; Ryan & Peterson, 2004), self injurious behavior, or even the relatively benign circumstances of noncompliance (Ryan & Peterson, 2004). The usual reaction to the application of restrictive procedures is heightened aggressive behavior (Greene, Ablon, & Martin, 2006) that may escalate to hostility on the part of both the adult and student (Mohr, 2010). Paradoxically, the distinguishing features of ED, namely aggression and non-compliance, are precisely the behaviors that most often result in the use of S/R procedures (Crocker et al., 2010; Day, 2002; Mohr & Anderson, 2001).

An extensive search of the literature failed to identify studies showing that S/R are effective methods for reducing externalizing behaviors or improving outcomes for students classified as ED (Busch & Shore, 2000). In reality, restrictive procedures are

not cost effective (LeBel & Goldstein, 2005), impose a psychological toll on staff and students (New Freedom Commission on Mental Health [CMH], 2003; Greene et al., 2006), and may cause serious injury or, in rare instances, death (CMH, 2003; Greene et al., 2006). Continued use of ineffective, potentially harmful practices speaks to the fundamental need for school-based initiatives which entail scientifically proven methods (Greene et al., 2006; Kam, Greenberg, & Kusche, 2004). Consequently, it is crucial that teachers who work with students classified with ED are well trained and supported by means of frequent and rigorous professional development programs.

The efficacy of S/R aside, legislation is pending that will require schools to earnestly evaluate current disciplinary and safety practices. Since 2008, educators in Pennsylvania have been operating under the Department of Education's special education regulations, 22 Pa. Code Chapter 14 and Chapter 711. These regulations stipulate that physical restraint is an emergency response, to be considered only as a measure of last resort, and only after other less restrictive interventions have failed (PDE, 2009). Current federal mandates such as No Child Left Behind Act of 2001 (NCLB) and the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA) challenge schools to proactively intervene *before* behavior patterns become established and highly resistant to intervention. These regulations also require educators to implement evidenced-based positive practices but do not specifically address or prohibit the use of restrictive interventions or other aversive behavioral techniques (Jones & Feder, 2009). However, recently proposed federal legislation would rectify the limitations of NCLB (2001) and IDEIA (2004) by necessitating state uniformity and mandating changes in current behavioral management practices, particularly the use of restrictive procedures.

Specifically, the Keeping All Students Safe Act (H.R. 1381) proposes standards that would limit the use of S/R on children by establishing safety measures in schools similar to those mandated for use by hospitals and other community-based facilities.

In preparation to meet potential legislative mandates, districts must proactively choose crisis prevention and intervention models of practice which have proven effective in reducing the use of restrictive procedures (Ryan, 2009). Currently, school districts are required to provide professional development and implement positive evidenced-based behavior practices that are in fact effective in preventing or ameliorating challenging behaviors (Ryan & Peterson, 2004). Nonetheless, published studies show that efforts to provide education to students with ED have been largely ineffective (Walker, Nishioka, Zeller, Severson, & Feil, 2000) and that most school based emotional support programs are fragmented, of insufficient duration, and lack implementation fidelity and outcome assessment (Kam et al., 2004).

As school districts seek ways to remedy these deficiencies and serve the interest of all students (National Disability Rights Network [NDRN], 2009), districts frequently engage for-profit providers and agencies to train staff how to interact in proactive, positive ways to decrease the need for restrictive procedures (Ryan, 2009). Professional training providers such as Handle with Care Behavior Management System Inc., JKM Training Inc., Crisis Prevention Institute Inc., Professional Assault Response Training, Professional Crisis Management, Therapeutic Crisis Intervention, and The Mandt Systems (Ryan, 2009), will train and certify staff in crisis de-escalation techniques with particular emphasis on physical safety procedures. However, Mohr (2010) advises careful program selection since some aggression management systems are not evidenced-based.

Because of the serious nature and implications of S/R, it is imperative that school districts choose a fiscally reasonable, universal, research-based system that reduces and may eliminate the need for S/R procedures (Ryan, Peterson, Tetreault, & Van Der Hagen, 2008).

Collaborative Problem Solving: An Alternative to Seclusion and Restraint

With so many programmatic options available, it is essential to concentrate on these interventions that have proven to be highly effective (Sander, 2010). Podesta et al. (2008) contend that the best cure for a problem is prevention. A promising pre-emptive approach implemented successfully in psychiatric and therapeutic settings, the Collaborative Problem Solving (CPS) model may offer educators the instructional and behavior management techniques beyond those covered in general coursework and generic behavior management seminars; thereby establishing a sense of competence (Carlson, 1996) to manage exceptionally challenging behavior. What sets the CPS model apart from other prevention and de-escalation programs is the calculated absence of instruction in physical interventions and safety procedures. Instead, this comprehensive model centers on helping children and adults learn to resolve conflicts, disputes, and disagreements in a collaborative way thereby avoiding use of a restrictive procedure (Greene et al., 2006). The CPS model emphasizes emotion regulation and evaluates the underlying cognitive skills necessary for problem-solving (Epstein & Saltzman-Benaiah, 2010). Additionally, CPS requires a comprehensive assessment in the global cognitive domains of flexibility, frustration tolerance, and problem-solving (Greene et al., 2006) followed by direct instruction in specific skills that may be contributing to behavioral difficulties. According to Greene's (1998) paradigm, children's noncompliant behavior is

not viewed as manipulative or willful but rather a type of disability (Epstein & Saltzman-Benaiah, 2010) that triggers a child's aggressive or unsafe behavior (Greene, et al., 2006). Implementation of this proactive model requires formal, on-going professional development programs that include regularly scheduled reflection exercises and collegial support as recommended by Scheuermann, Webber, Boutot, and Goodwin (2003). By focusing on crisis prevention rather than crisis management, a reduction in the use of S/R is an outcome of exceptional programming "not necessarily an endpoint in and of itself" (Greene et al., 2006, p.611).

Significance of the Problem

Insufficiently trained educators and the use of ineffective, potentially harmful interventions can inadvertently maintain and exacerbate the behavioral problems of students and adversely impact the staff and students in ED classrooms. Ultimately, these negative effects ripple beyond the school community to affect the larger society. For example, students classified as ED experience less school success than any other subgroup of students with or without disabilities; demonstrate poor self control when compared to same-age peers; and have significantly underdeveloped social skills (Wagner et al., 2005). These findings might explain why students with ED have a higher dropout rate than students with other disabilities (Wagner & Davis, 2006). In fact, 51 percent of the time the educational career of a student with ED ends in dropout (Wagner et al., 2005), thereby increasing their risk for criminal involvement and welfare dependency (Frey, Nolen, Van Schoiack, & Hirschstein, 2005). Darling-Hammond (2004) reported a link is present between lack of education, which includes dropout, to crime and welfare dependency. Specifically, women who do not complete high school are

much more likely than others to be on welfare, while men who fail to obtain a high school diploma are much more likely to be in prison. Therefore, students with ED are significantly at risk for becoming part of a growing underclass, cut off from productive, meaningful and rewarding engagement in society (Darling-Hammond, 2004).

In 2003, Granello and Hanna estimated that the cost to society of just one adolescent who drops out of high school and turns to a life of crime or drugs, or both, amounts to between 1.7-2.3 million dollars over their lifetime. Undeniably, it is in society's best interest to provide all students with the essential skills and opportunities that ultimately contribute to a gratifying, productive adult life. Therefore, to this end, the public education system must strive to guarantee that every child is taught by someone who is prepared and competent (Darling-Hammond, 2000) to manage challenging behaviors, ensure student academic success, and teach the most disadvantaged learners. In light of published research regarding students who drop out of high school, it is apparent that professional development and evidenced-based intervention systems, customized to address children's externalizing behavior concerns in the school setting (Kjobli & Sorlie, 2008), are necessary to interrupt the trajectory toward poor post-school outcomes.

In addition to extremely poor post school outcomes, serious psychological and physical safety risks are also associated with S/R procedures. Numerous children with behavioral challenges have suffered injuries ranging from bites to broken bones (Child Welfare League America [CWLA], 2004) while others experience psychological trauma (CMH, 2003; Greene et al., 2006) and loss of dignity (CMH, 2003) consequent to a restrictive incident. It was a series of articles titled "Deadly Restraint: A Nationwide

Pattern of Death” (Weiss, Altimari, Blint, & Megan, 1998) published by the *Hartford Courant* that caused a public uproar and attracted government attention. The articles examined the brutality of S/R practices and exposed serious injuries, treatment-induced trauma (Huckshorn, 2006), and shockingly documented 142 deaths related to S/R, 37 of which involved children (Weiss et al., 1998). Understanding the seriousness and scope of the problem, journalists deemed their findings to be an under representation of such incidents because reporting and monitoring systems across the nation were inconsistent and inadequate (Weiss et al., 1998). In response, the United States Government Accountability Office (GAO) (1999), which is the investigative division of Congress, commissioned a study that confirmed the *Hartford Courant*’s claim citing at least 24 patients who had died from S/R related incidents in 1998 alone. In 2006, Nunno, Holdena, and Tollara examined childhood and adolescent deaths related to restraints in residential settings in the United States from 1993 to 2003. In reviewing 45 fatalities, they found that 38 of them occurred during or after a physical restraint, 28 deaths occurred as a result of a prone (face down) restraint, and 25 were caused by asphyxia. Furthermore, the study found that none of the children’s behaviors or conditions that prompted the restraint would meet the standard of danger to self or others (Nunno et al., 2006). Mohr and Anderson (2001) criticized the continued use of restraints when less restrictive options were available to ensure safety, citing that these procedures violated the ethical principles of beneficence, to prevent or remove harm, and non-maleficence, to do no harm (Pantilat, 2008). Inexcusably and paradoxically, children and adolescents with behavioral and emotional disorders are harmed at the hands of those who are expected to nurture them (Weiss et al., 1998).

Purpose of the Study

The potentially harmful nature of S/R procedures and poor post-school outcomes for students classified as ED are well established. It is the responsibility of schools to ensure that the use of these behavioral interventions is promptly reduced and ultimately eliminated (Ryan, 2009). Based on the existing body of research in this area, the educational community has a clear obligation to provide teachers with the professional training that inculcates the intervention tools necessary for planning and implementing safe and sound educational programs (Carlson, 1996) for students classified with ED.

The objective of this research project was to evaluate the impact of a scientifically proven alternative to S/R for managing challenging behavior, on student aggression and the use of restrictive procedures in two private school settings designed to serve the special needs of students classified as ED. Specifically, through review of archival data, this project assessed whether staff training that emphasized positive behavior management and de-escalation of aggression effectively decreased student aggression and reduced the number of S/R procedures performed on students. Both components were judged to be equally important to this study because reduction of student aggression would likely improve student emotional regulation while decreasing S/R would provide evidence of desirable changes in staff perception and practice. The intention of this research was to ascertain if implementation of a school intervention reduced and possibly eliminated S/R; to determine if an evidenced-based system effectively reduced student aggression in the school setting; and to establish if school staff effectively utilized behavioral interventions that are crucial for the prevention of eruptions usually associated with children with severe behavioral problems (Merrell & Walker, 2004). This study

assessed the implementation fidelity and effectiveness of a school-based emotional support intervention model to ensure it was universal, data-driven (Kam et al., 2004) and enhanced the benefits and outcomes for students classified as ED (Ryan, 2009).

Research Questions

Greene (1998) offers a paradigm for implementing the Collaborative Problem Solving (CPS) model. The challenge now is to translate empirically-supported research into practice with implementation fidelity (Lewis, Chard, & Scott, 1998) and data-informed decisions. Specific research questions were, after implementation of the CPS model, were there (a) fewer behavioral infractions including physical aggression, noncompliance, and disruption; (b) a reduction in externalized behavior as measured by a standardized behavior rating scale; and (c) fewer and shorter periods of seclusion (time-out level 3) and restraint events? Additionally, this study sought to determine if there was an interaction between the externalized behavior as measured by a standardized behavior rating scale and the variables of prescribed psychotropic medication, participation in community mental health services, involvement with the legal system, eligibility for free reduced lunch, and gender.

This study had two overarching hypotheses. First, implementation of the CPS model in a private educational placement designed for students eligible for special education in the category of ED resulted in a reduction of the challenging student behaviors (physical aggression, disruption and non-compliance) that typically precipitate use of a restrictive procedure. Second, implementation of the CPS model reduced the prevalence and duration of physical restraint and seclusion incidents.

Justification of the Study

Although segregated schools are widely regarded as the venue of last resort with respect to educating students in the least restrictive environment (LRE), Kauffman, Bantz and McCullough (2002) concluded that separate settings are often more effective sites in which to satisfy the needs of students with ED because they can be more readily structured to support behavioral change. However, this is not the only reason students with ED are educated outside of the general education classroom. Research informs that students with serious maladaptive behaviors are perceived to be the least desirable to include in general education classes (Soodak, Podell & Lehmann, 1998) which may account for why 33 percent of students in the United States with ED do not attend their neighborhood schools (Wagner et al., 2006). Restraint data released from PDE (2010) confirm that more than 75 percent of the physical restraints reported during the 2009-2010 school year were conducted in school settings other than a district program or charter school; moreover, students identified with ED were restrained at a higher rate than all other disability categories combined. Arguably, a private school setting, designed for a population of students with ED who hold the highest probability of being restrained, offered an opportune environment in which to evaluate the outcomes of a research-based prevention/intervention model in an educational setting where the most difficult and neediest students are likely to attend.

To date, few formal action research studies have been conducted in educational environments which specifically target the circumstances under which restraint are likely to be applied, the frequency of incidents (Ryan, Peterson, Tetreault, & Van Der Hagen, 2008), or the effectiveness of school-based intervention models. Additionally, school-

based and psychiatric in-patient studies have focused primarily on frequency and duration of S/R incidents and only a few studies have empirically validated children's aggression with a reliable instrument (Damen, 2009) which is a shortcoming identified in the psychiatric literature (Martin, Krieg, Esposito, Stubbe, & Cardona, 2008). This project design considered both limitations and attempted to contribute to this void in the literature.

Summary

Many peer-reviewed, published reports suggest that educators are poorly prepared to manage the extremely challenging behaviors of aggression and non-compliance, which are common in students with ED (Ryan & Peterson, 2004). Too often educators rely on ineffective, potentially harmful interventions that adversely impact students as well as staff. Current Pennsylvania guidelines and pending federal legislation relative to S/R are putting pressure on school districts to identify and implement evidence-based models of intervention. The intent of this dissertation was to examine the relationship between implementation of an evidence-based intervention model on student aggression and staff use of S/R procedures. The ultimate goal of this study was to determine whether implementation of the CPS model, that has proven successful in psychiatric settings, was equally effective in reducing restrictive practices when implemented in two segregated special education schools designed for students classified as ED.

Chapter One provides a description of the current S/R status in Pennsylvania, the concerns associated with S/R, and outlines the importance of this dissertation project. A comprehensive review and synthesis of relevant literature to S/R is presented in Chapter Two. Chapter Three describes the proposed quantitative, action-research design and the

methods of data collection, and includes a detailed description of the standardized instrument that was utilized to measure student's externalizing behaviors. Quantitative analyses of four research questions are included in Chapter Four. In Chapter Five, the summary of findings and future implications of this study are discussed.

Definitions and Terms

Emotional Disturbance: One of 12 disability categories specified under the Individuals with Disabilities Education Improvement Act of 2004: "(i) The term means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance: (A) An inability to learn that cannot be explained by intellectual, sensory, or health factors; (B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (C) Inappropriate types of behavior or feelings under normal circumstances; (D) A general pervasive mood of unhappiness or depression; and, (E) A tendency to develop physical symptoms or fears associated with personal or school problems. (ii) The term includes schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance" (CFR §300.7(a) 9).

Children's Health Act 2000: expands, strengthens, and coordinates research, prevention, and treatment activities for diseases and conditions having a disproportionate or significant impact on children; and defines the terms "restraint," and "seclusion" for facilities receiving Medicaid and other types of federal funding (Public Law 106-310 Sec. 1004).

Collaborative Problem Solving (CPS): a process by which adults and students resolve problems together and work toward mutually agreeable solutions (Greene, 2010).

Individuals with Disabilities Education Improvement Act of 2004 (IDEIA): a federal law ensuring services to children with disabilities throughout the nation. IDEA governs how states and public agencies provide early intervention, special education and related services to more than 6.5 million eligible infants, toddlers, children and youth with disabilities (Public Law 101-476).

Keeping All Students Safe Act: Formerly Preventing Harmful Restraint and Seclusion in Schools Act (HR 4247), creates standards to limit the use of physical restraint and seclusion on children, by establishing safety standards in schools that will be similar to those already set in place by hospitals and other community-based facilities. It also prohibits mechanical restraints and other restraints that restrict breathing (H.R. 1381).

No Child Left Behind Act of 2001 (NCLB): legislation supporting standards-based education reform, which is based on the belief that setting high standards and establishing measurable goals can improve individual outcomes in education. The Act requires states to develop assessments in basic skills to be given to all students in certain grades, if those states are to receive federal funding for schools (United States Department of Education, 2002) (Public Law 107-110).

Preventing Harmful Restraint and Seclusion in Schools Act (HR 4247): legislation that authorizes the U.S. Department of Education to protect students from harm during seclusion and restraint by creating national regulations strictly limiting the ability to

restrain and seclude students; currently known as the *Keeping All Students Safe Act* (H.R. 1381).

Restraint: The application of physical force, with or without the use of any device, for the purpose of restraining the free movement of a student's or eligible young child's body. Does not include briefly holding, without force, a student or eligible young child in order to calm or comfort him, guiding a student or eligible young child to an appropriate activity, or holding a student's or eligible young child's hand to safely escort her from one area to another (22 Pa. Code 14.133 (b)).

Restraint Information System of Collection (RISC): web-based system used to monitor the incidents of restraint in school districts across the Commonwealth of PA (PDE, 2009).

Seclusion/Time-out Level III: a restrictive form of timeout that removes students from the classroom setting, placing them in an area where they are physically prevented from leaving (Costenbader & Reading-Brown, 1985; Busch & Shore, 2000)

CHAPTER 2

LITERATURE REVIEW

Introduction

The literature review examines six areas that are fundamental to this study. First, the criteria and characteristics common to students classified as having an emotional disturbance (ED) are discussed to provide a more detailed description of the behaviors and risk factors typically exhibited by these children. Next, the circumstances for applying seclusion and restraint (S/R) are chronicled relative to use in therapeutic and educational settings. Third, the historical context of guidelines and legislation at the state and federal level is examined to explain the impetus for eliminating the use of S/R while concurrently increasing the use of positive evidence-based intervention practices. The next section reviews findings of S/R studies which have been conducted in psychiatric settings and school environments. Subsequently, the discussion addresses issues of teacher preparation, certification, experience and training that impact the use of S/R techniques as interventions. The last section of the literature review describes aspects of the Collaborative Problem Solving (CPS) model, including the philosophy which inspires the model, the goals of intervention, and the individual treatment components.

Characteristics of Students Classified with Emotional Disturbance

The existence of maladaptive student behavior does not inherently suggest ED or the need for direct intervention. Therefore, an educational team must carefully consider multiple data sources (Witmer, Dall, & Strain, 1996, as cited by Cluett et al., 1998) such as academic, behavioral, emotional and cognitive factors and include some assessment of social or functional adjustment (Cluett et al., 1998) before classifying a student as ED.

Under Public Law 101-476, the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA), ED is recognized as one of 13 educational disability categories. The school psychologist, along with the multi-disciplinary team, conducts an educational evaluation to determine if the student exhibits one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance: (a) An inability to learn that cannot be explained by intellectual, sensory, or health factors; (b) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (c) Inappropriate types of behavior or feelings under normal circumstances; (d) A general pervasive mood of unhappiness or depression; and, (e) A tendency to develop physical symptoms or fears associated with personal or school problems. (ii) The term includes schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance (CFR §300.7(a) 9). This somewhat ambiguous criterion is utilized by educators in Pennsylvania to determine if a student is eligible for and in need of special education services. Descriptors such as *long period of time*, *marked degree*, *satisfactory relationships*, *normal circumstances*, *general* and *tendency* open the definition to individual interpretation and therefore likely inconsistency in team eligibility determination. Furthermore, research suggests that classification may be compromised because the identification process is often rushed, biased and determined by organizational needs (U.S. House of Representatives, 1997) which may further diminish classification reliability.

Identification issues notwithstanding, the most commonly recognized behaviors associated with ED are aggression, noncompliance, disruptive verbalizations, volatility

and inappropriate or deficient social skills (Dunlap & Childs, 1998). Students with ED exhibit externalizing behaviors on a “continuum from chronic and persistent argumentativeness and resistance to direct commands, to verbal and physical aggression, including the destruction of property or harm to self or others” (Epstein & Saltzman-Benaiah, 2010, p. 28). Kauffman, Lloyd, Baker, and Reidel (1995) underscored severely antisocial behavior in their description of ED while Epstein and Saltzman-Benaiah (2010) included poor emotional self-control and inflexible thinking as additional indicators. There is also evidence to suggest that conventional behavior interventions, such as point systems or enforcing restrictions, are generally ineffective with ED students. In fact, research indicates that long-established behavior management techniques may actually increase student resistance, staff-student power struggles and aggressive behavior (Epstein & Saltzman-Benaiah, 2010). When students are predisposed to externalizing behaviors and traditional interventions are unsuccessful and potentially detrimental to the student, managing persistent and chronic behavior disrupts the learning process and invariably frustrates even the most experienced teacher.

Notably, the state’s criterion of ED also includes internalizing behaviors such as pervasive unhappiness, depression, and anxiety; however, these are not the kinds of behaviors which typically result in an ED classification. Merrell (2001) identified students with internalizing problems as a population that has been blatantly ignored and underserved in our special education and mental health systems. For example, identification rates are lower for females among students classified with ED (U.S. Department of Education, 1994). This gender disparity has been attributed to the

tendency for females to exhibit internalizing problems that do not usually interfere with classroom management (Center for Effective Collaboration and Practice [CECP], 2001).

Whether the student exhibits behaviors of an internalizing or externalizing nature, the classification of ED does not provide all the information needed to fully understand a student's unique difficulties or help him or her overcome their challenges. Profiles of students with ED have been studied in various settings to identify commonalities in environmental, social and biological risk factors. Research conducted by Cook and colleagues (2008) found that 48 percent of students classified with ED were likely to have social skills considerably below same-age peers. Many students have documented expressive and receptive language disorders (Rogers-Adkinson & Griffith, 1999; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005), demonstrate an average reading level of fourth grade or below (Vacca, 2008), and are more likely to be retained, fail courses, and miss days of school (Della Toffalo, & Semow, 2007). Additionally, many students with ED are at great risk for substance-abuse disorders (Allison et al., 1999) and approximately one in 10 are involved in the criminal justice system (Cook et al., 2008). Wagner et al. (2005) also studied students classified with ED and made the following conclusions: nearly 30 percent exhibit concomitant academic deficits, over 30 percent live below the national poverty level in one parent households, 20 percent of their parents have not graduated high school and are unemployed, over 50 percent of the population is African American, and 48 percent of elementary/middle school children and 73 percent of secondary students will be suspended or expelled during their school career. Needless to say, multiple risk factors predictably influence the severity of the emotional

dysfunction (Sameroff, 2000, as documented by Sutherland & Oswald, 2005), as well as the intensity of intervention required to address the student's educational needs.

Seclusion and Restraint

Most instances of student misbehavior can be managed effectively through positive behavior management techniques such as reinforcement and direct instruction. However, when these traditional interventions are unsuccessful, Costenbader and Reading-Brown (1995) noted that educators habitually resort to increasingly aversive procedures on the continuum of behavior techniques. Aversive behavioral methods may include response-cost procedure, such as removal of a desirable item or event (Laraway, Snyckerski, Michael, & Poling, 2003), to direct punishment, which is defined as infliction of pain or confinement as a penalty for an offense (Bandura, 1969). The phenomenon is especially true with challenging students who demonstrate externalizing behaviors such as aggression or non-compliance, which are the most frequent acts that precipitate use of restraint (Crocker, Stargatt & Denton, 2010; Day, 2002; Goren, Singh, & Best, 1993; Mohr & Anderson, 2001). In particular, the manner in which limits are set by adults may in fact precipitate or exacerbate aggressive behavior (Greene, Ablon, & Martin, 2006) because there is evidence to support that staff redirection or limit-setting typically precedes most assaultive behavior on child inpatient units (Ryan, Sparrow-Hart, Messick, Aaron, & Burnett, 2004). Emergence of externalizing maladaptive behaviors often begin with a staff-initiated encounter (Mohr & Anderson, 2001) in which the adult, who might not be aware he is doing so, uses coercive authority to elicit compliance (Mohr, 2010).

Mohr (2010) showed that an authoritarian attitude toward children violates their sense of autonomy, thereby increasing oppositional behavior (Ryan et al., 2004) and

further enrages children who resist simply in defense of personal dignity (Weiss, Altimari, Blint, & Megan, 1998). In a situation such as this, an adult directive quickly advances to escalation of hostility by the adult and student (Mohr, 2010) and the outcome is rarely positive for the student (Mohr & Anderson, 2001). This power struggle is identified by Goren et al. (1993) as the aggression-coercion cycle. Surprisingly, even though there is insufficient evidence in the literature to support the benefit of restrictive measures (Day, 2002), punitive behavior interventions continue to be used.

Time Out/Seclusion Procedures

Time-out as a behavioral intervention has a long history in educational settings and was even used prior to mandatory school attendance in 1895 (Ryan, Peterson, Tetreault, & Van Der Hagen, 2008). In the evolution of implementation, time-out became a universal tool to modify a broad range of inappropriate, maladaptive behaviors. More recent studies have shown that with proper implementation, time-out has been shown to be effective in reducing maladaptive behavior across a wide range of student populations (Ryan, Sanders, Katsiyannia, & Yell, 2007b), including students with emotional and behavioral disorders (Noll, & Simpson, 1979; Rolider, & Van Houten, 1985). A survey conducted by Ruhl (1985) found that 88 percent of special education teachers reported using time-out procedures and a study by Zabel (1986), found that 70 percent of teachers working with emotionally/behaviorally disordered students resorted to time-out in the classroom.

There are generally three acknowledged levels of time-out which range from least restrictive to most restrictive: inclusion, exclusion and seclusion (Ryan et al., 2008). According to Ryan et al. (2008), inclusion time-out allows the student to observe

classroom instruction but denies him or her the opportunity to participate in lessons or earn reinforcement. This non-exclusionary time-out is achieved through techniques such as planned ignoring and withdrawal of materials (Ryan et al., 2007b). Exclusion time-out involves removing the student from the reinforcing area by positioning the student in another location in the classroom, such as the corner or behind a partition (Ryan, Peterson, Tetreault, & Vander Hagen., 2007a). Seclusion is the most restrictive level of time-out (Costenbader & Reading-Brown, 1985) and one of the most frequently used strategies by teachers for suppressing disruptive behavior (Gast & Nelson, 1977). Seclusion time-out is defined by Busch and Shore (2000) as removal of the student from the classroom to another location from which the student is prohibited from leaving. Implementation of seclusion time-out aligns with the intervention philosophy of John Connolly (the inventor of the padded seclusion room) who recommended use of isolation when patients were too violent to be controlled (Colaizzi, 2005). During the 1970's and 1980's, the use of the seclusionary time out room gained popularity as an intervention technique and became a common practice in special education settings (Ryan et al., 2008).

Despite the widespread application of time-out measures, Ryan (2009) could find only a few early studies regarding the efficacy of seclusion time-out. Recent studies have shown that educators often omit or unintentionally misapply the behavior principles underlying the time-out method and consequently use it without fidelity (Mohr, Martin, Olson, Pumariega, & Branca, 2009; Nelson & Ruthford, 1983) and sometimes over excessively (Ryan et al., 2007a). Moreover, according to anecdotal documentation, time-out is employed for a longer period of time than necessary (Council for Children with

Behavior Disorders [CCBD], 2009a). In a study conducted by Grskovic et al. (2004) it was determined that, on average, 23 hours per school year per student was lost in time-out. Furthermore, time-out is often misused as an aversive response intended to reduce or suppress inappropriate behavior rather than remove the student from positive reinforcement-based techniques. For example, a disengaged student may find the classroom setting aversive or unstimulating and therefore seek to escape the situation through seclusion. Sutherland and Oswald (2005) noted that in the absence of student engagement, which is common for students with ED, the teacher frequently exhibits negative behavior towards the student which only further increases student disengagement. Bacon (1990) cautions that time-out only works well when the educational environment is more motivating to the student than isolation. Ryan et al. (2008) further warn that time-out can become inadvertently reinforcing to the student and teacher such as when the student avoids a difficult task or the adult avoids the instructional disruption caused by the student. This scenario was studied by Nelson and Ruthford (1983) and Mohr and Anderson (2001) who agreed that the frequency and duration of time-out actually increased with subsequent episodes of misbehavior because the time-out procedure strengthened the maladaptive behavior.

Although an extensive literature exists regarding students classified with ED in relation to scholastic ability, there are few studies which specifically examine the correlation between seclusion practices and their effect on student achievement in reading, math and writing. Recurrent and extended removal of a student from the learning environment is cause for concern due to the resulting impact on the student's academic achievement. Grskovic et al. (2004) remarked upon the loss of student time on academic

task but also acknowledged the impact on the classroom learning environment due to the loss of instructional time when the teacher must enforce and monitor the procedure. It stands to reason that the loss of academic instruction is appreciably compounded in classes where multiple and progressively more exclusionary time-out episodes occur. Contrary to the findings of most investigators in the field, a study conducted with elementary students with ED failed to find a relationship between the amount of time students spent in seclusionary time-out and their performance on curriculum-based measures (CBM) of academic achievement (Skiba & Raison, 1990). A possible explanation for the divergent finding was presented by the authors who speculated that the requirement for students to complete work missed during seclusion may have been a factor that influenced results.

Restraint Procedures

Redl and Wineman (1952) were among the first researchers to discuss the use of physical restraint in educational settings for students with emotional or behavioral disorders. Prior to that time, literature on restraint was situated primarily in the fields of medicine and psychiatry dating back to the late 18th century (American Academy of Child and Adolescent Psychiatry, 2000). To date, few formal research studies have been conducted in educational environments that specifically targeted the circumstances under which restraint is likely to occur, the frequency of incidents (Ryan, et al., 2008), or the effectiveness of school-based intervention models. Nevertheless, despite the paucity of empirical research which might inform educators regarding practice of restraint or therapeutic benefit with children and youth (CWLA, 2004), most studies continue to endorse the use of restraint. Mohr and Anderson (2001) discovered many examples of

restraint support in their meta-review of textbooks. In 1994, Fisher (as cited by Mohr & Anderson, 2001) wrote in a nursing textbook, "It is nearly impossible to operate a program for severely symptomatic patients without some form of seclusion or physical or mechanical restraint" (p. 1587). Long, Morse, and Newman (1996) as cited by Ryan and colleagues (2008), went so far as to identify physical restraint as an intervention technique required for every teacher's tool box of classroom strategies. One year later, Thelander and Ribble (1997) suggested that if a patient refused to move or take medication, a restraint intervention was justified. Mohr and Anderson (2001) identified a serious omission in all of these textbooks given that none of the authors acknowledged the insufficient research base endorsing restraint and its implementation. Several years later, Ryan and Peterson (2004) conducted a review of textbooks and documented that physical restraint continues to be warranted for purposes of patient and staff safety.

In the literature, physical restraint is referred to as ambulatory restraint, manual restraint, physical intervention, therapeutic holding (CCBD, 2009b) or interpersonal restraint (Brendtro & Ness, 1991). Irrespective of terminology, the definition of restraint is more similar than different across mental health, law enforcement and education disciplines with there being general understanding that it is to be used only as a safety measure of last resort. Pennsylvania defines physical restraint in educational settings as the application of physical force, with or without the use of any device, for the purpose of restraining free movement; it is an emergency response, only to be considered as a measure of last resort, and only after other less restrictive interventions have been exhausted. The definition of restraint does not include briefly holding, without force, a student in order to calm or comfort him, guiding a student to an appropriate activity, or

holding a student's hand to safely escort him or her from one area to another (22 Pa. Code 14.133 (b)). The language, *without force*, in the latter part of the definition is unique to Pennsylvania and pertinent to the state reporting system. For example, if a student refuses to independently move to a seclusion area, which is a common occurrence, the staff may physically escort the student to the designated location. Under Pennsylvania's definition, using physical force to transport a student, however briefly it might take, constitutes a reportable restraint. Notably, some state guidelines do not consider a physical hold lasting less than five minutes to be a form of restraint (Greene et al., 2006) and consequently it is not reported as such. This inconsistency in S/R definition is a consideration when state restraint data are compared and when study results are reported.

While most service professionals agree that physical restraint is sometimes necessary for safety purposes, the literature clearly indicates that it is actually misused and overused (U.S. Government Accountability Office [GAO], 1999). For example, early research by Skiba, Peterson, and Williams (1997) reported that office discipline referrals were generally not due to safety concerns, but rather to student noncompliance or disrespect. Delaney and Fogg (2005) studied patients in adolescent psychiatric units and determined that the incidents which prompted restraint primarily involved agitation and threats, in addition to assaults. Nunno, Holdena, and Tollara (2006) reviewed 23 cases of restraint and determined that none of the child behaviors or circumstances that prompted the restraint met the commonly accepted criteria for the use of a restraint, namely danger to self or others. Similarly, Petti, Mohr, Somers, and Sims, (2001) found that youth and patients reported noncompliance and anger were the reasons for deploying S/R despite

staff claiming safety concerns as the primary reasons for use of S/R. In fact, Ruhl and Hughes (1985) discovered that restraint was used both as a planned behavioral intervention and a spontaneous reaction to aggression. Clearly, restraint procedures continue to be improperly applied as a treatment or behavioral intervention as opposed to being a safety practice of last resort (Horner & Sugai, 2009).

Although the negative effects of S/R have been documented extensively in the literature (Tsemberis & Sullivan, 1988; Mohr & Anderson, 2001), there are still proponents who regard restraint as a therapeutic technique necessary for maintaining an individual's emotional health. In fact, 20 years ago, half of the states in the nation believed restraint had some therapeutic value (Crocker et al., 2010). However, that opinion is no longer widely accepted or regarded as credible. For instance, when Day (2002) reviewed research studies conducted by proponents of restraint, he concluded that most studies were of poor quality and used questionable, anecdotal reports to support their findings. Furthermore, within the last decade, robust research has consistently shown that S/R procedures do not yield positive results (Merrill & Walker, 2004) and can be both physically and psychologically harmful to patients (Mohr, 2010; Mohr & Anderson, 2002; Mohr et al., 2009; Greene et al., 2006). For instance, children subjected to restrictive techniques have reported feelings of anger, fear and confusion during such restrictive experiences (Mohr & Anderson, 2001) and children with traumatic histories who were secluded or restrained perceived the setting as a source of trauma not treatment (LeBel & Goldstein, 2005; Crosland et al., 2008). Martin, Krieg, Esposito, Stubbe, & Cardona (2008) included direct care staff involved in the child's treatment as additional victims who might suffer psychological distress as a result of S/R. Without evidence-

based research to demonstrate that S/R methods are effective in improving the behavior or emotional health of students, the premise of therapeutic benefit is generally discounted by most current researchers (Day, 2002).

Historical Context of Federal Legislation and State Guidelines

Legislation and guidelines at the state and federal levels are the primary forces driving educational practices and promoting educational reform. State and federal mandates compel school districts to address critical educational issues, such as the use of S/R. Pennsylvania adopted guidelines in 2008 which mandate the use of positive, evidenced-based intervention practices as an alternative to the use of S/R in school settings. The federal government, on the other hand, is in the early stages of developing national regulations to restrict the ability to restrain and seclude students.

Federal Legislation

Nearly 15 years ago, the United States Office of Mental Health and Substance Abuse Services (OMHSAS), led by Charles Curie, advocated for more positive ways of supporting a patient in crisis. Through adoption of policy in 1997, S/R procedures were restricted to be used only when the patient was at a risk of imminent harm to themselves or others and only after other less restrictive interventions were unsuccessful (Busch & Shore, 2000). Seclusion and restraint were considered an indication of treatment failure and hospitals were directed to manage crises using de-escalation techniques such as conflict resolution, mediation, therapeutic communication and violence prevention to safely resolve emergency situations (Smith et al., 2005). Additionally, each incident was to be followed by a patient debriefing, a quality review, and finally a treatment plan revision (Busch & Shore, 2000).

Thirteen years ago, the *Hartford Courant* newspaper ran the expose', "Deadly Restraint: A Nationwide Pattern of Death" (Weiss et al., 1998). The *Courant* series was the impetus to a succession of advocacy and legislative investigations of S/R fatalities in the mental health field. In response to the *Courant*, the GAO (1999) authorized a study that resulted in passage of the Children's Health Act of 2000. This act expanded, strengthened and coordinated research, prevention and treatment activities for diseases and conditions having a disproportionate or significant impact on children; and defined the terms "restraint," and "seclusion" for mental health facilities receiving Medicaid and other types of federal funding (Public Law 106-310 Sec. 1004). However, as S/R incidents declined in hospitals and residential facilities (CWLA, 2004), reports of alleged abuse and deaths related to restrictive procedures in public and private educational settings were increasing. For instance, a disturbing investigative report by the National Disability Rights Network (NDRN) (2009) chronicled deaths and injuries of school students across the nation and analyzed individual state S/R policies and guidelines. Concurrently, the CCBBD (2009a; 2009b) published position summaries on the use of S/R procedures in school settings.

In contrast to medical, psychiatric, and law enforcement agencies, there are currently no federal provisions or laws (Jones & Feder, 2009) or accreditation requirements from national professional organizations (CCBD, 2009b) concerning the use of S/R in public schools. Although federal mandates such as No Child Left Behind (NCLB) (2001) and IDEIA (2004) require educators to implement evidenced-based, preventative, and positive practices, these acts do not specifically address or prohibit the use of restrictive interventions or other aversive behavioral techniques (Jones & Feder,

2009). The lack of federal guidance is a concern because according to Ryan et al. (2008), it leads to improper implementation and abuse of interventions in educational settings.

Similar to the sequence of events that occurred in 1999, the GAO (2009) commissioned another S/R study but this time the focus was on public and private schools. The purpose of the investigation was to review S/R laws applicable to students, determine the prevalence of these restrictive procedures and examine the circumstances surrounding incidents of injury or death. The GAO study led to the introduction of the Preventing Harmful Restraint and Seclusion in Schools Act (HR 4247) in 2009. Unfortunately, this legislation passed in the House of Representatives in March, 2010, but failed to clear the Senate. In April 2011, this same bill was reintroduced to the House as the Keeping All Students Safe Act of 2011 (HR 1381) but without a Senate companion bill. The Keeping All Students Safe Act is a national effort to address the issue of S/R with five purposes: (1) prohibit elementary and secondary school personnel from managing any student by using any mechanical or chemical restraint, physical restraint or escort that restricts breathing, or aversive behavioral intervention that compromises student health and safety; (2) prohibit such personnel from using S/R, unless such measures are required to eliminate an imminent danger of physical injury to the student or others and certain precautions are taken; (3) require states and local educational agencies (LEAs) to ensure that a sufficient number of school personnel receive state-approved crisis intervention training and certification in first aid and certain safe and effective student management techniques; (4) prohibit S/R from being written into a student's education plan, individual safety plan, behavioral plan or individual education program as a planned intervention; and (5) require schools to establish procedures to

notify parents in a timely manner if S/R is imposed on their child. Stated briefly, HR 1381, if passed would authorize the U.S. Department of Education to safeguard students by creating national regulations intended to limit the ability to restrain and seclude students.

Pennsylvania Guidelines

Without federal legislation or regulations to guide implementation of restrictive procedures in the school setting, some state education departments have implemented policies or developed regulations on their own. A review of state guidelines and policies reveals that approximately 59 percent of states have instituted legislation, policies and guidelines for S/R in schools (NDRN, 2009). Nevertheless, Ryan, Robbins, Peterson, and Rozalski (2009) found that these states' legislation lacked uniformity of content. Almost 90 percent of states still allow potentially harmful, face-down restraints; 45 percent stipulate or recommend that schools notify parents or guardians of S/R use; and only 34 percent require that staff receive training before being permitted to restrain students (NDRN, 2009).

Pennsylvania's Department of Education is earnestly concerned about the use of de-escalation and restraint procedures in educational settings. The special education regulations, 22 Pa. Code Chapter 14 and Chapter 711, were amended in 2008 to prohibit possibly harmful, prone (face-down) restraints; require that schools notify parents or guardians of S/R use; and require that staff receive training before being permitted to restrain children (NDRN, 2009). These regulations also included revised language and new requirements relative to positive behavior support. The new provisions (Section 14.133 and Section 711.46) provided a definition of restraint, established criteria as to

when restraint could be included in a student's or eligible young child's Individual Education Program (IEP), stipulated that behavior support plans must be based on a functional assessment of behavior (FBA), and required that subsequent to a referral to law enforcement, an updated FBA be completed and the student's plan modified. The salient implication of the revised regulations is that physical restraint is an emergency response, to be considered only as a measure of last resort, and only after other less restrictive interventions have been used (Pennsylvania Department of Education [PDE], 2009). The amendments to Chapter 14 and 711 clearly demonstrate the Commonwealth's commitment to making school safe and eliminating the use of S/R in educational settings. The challenge lies in putting these regulations into practice.

Studies of Seclusion and Restraint

For the most part, children hospitalized in psychiatric units demonstrate the same externalizing behaviors exhibited by students in emotional support programs: noncompliance, disruption, and verbal and physical aggression. The difference, however, is that children in a psychiatric setting often display more severe behavior than can be managed in the educational setting and as a result require intensive psychotherapeutic and pharmacological interventions (Currier & Allen, 2000). Mohr et al. (2009) broadened the differences to include staff composition and therapeutic mission of the psychiatric unit. Despite similar behavioral concerns and intervention needs in public schools, research has been conducted predominantly in the psychiatric milieu. For instance, although Ryan and Peterson (2004) identified 15 experimental studies that investigated restraint with children, only three of these were conducted in educational settings. All the same, there is much benefit to be gained from examining the psychiatric and medical literature

relative to S/R. The research in these fields steadily advances relative to S/R practice and procedures. Significant reduction and, in some instances, elimination of S/R provides a convincing argument for extrapolating from the existing studies to provide educators with intervention guidelines and protocols that can be successfully replicated in the school environment.

Psychiatric In-patient Settings

Even though psychiatric ideology has been described as inflexible, over-structured, and focused on ease of implementation more than therapeutic benefit (Mohr et al., 2009), there is extensive literature to suggest otherwise. Therefore, in this dissertation, the psychiatric literature on S/R will be organized around promising practice themes which emerged during the literature review.

Workforce development.

Prevention strategies are critical to work-force development. Horner and Sugai (2009) contend that use of S/R is largely due to insufficient investment in prevention efforts. It has been well established that S/R procedures are frequently based on necessity rather than evidence-based strategies; yet studies suggest staff training can decrease the use of S/R by providing a repertoire of alternative interventions. Staff must recognize options for interventions which might prevent restraint (Ryan et al., 2009). Otherwise, without positive behavior supports, ‘emergency’ situations requiring restraint are more likely to occur (CCBD, 2009b). In a study by LeBel and Goldstein (2005), restraint prevention was attributed to staff factors such as management of the environment, ability to anticipate crises, and physical and emotional availability of caregivers to adolescents before a problem erupted. Crosland et al. (2008) used a pre- and post- training incident

report paradigm to show that staff training in positive, preventative behavioral strategies can reduce the use of restrictive procedures and decrease injuries to both children and staff.

The literature informs that the following factors should be the focus of any S/R reduction model: aggression prevention and alternative interventions (Busch & Shore, 2000), recognition of early signs of agitation (Khadivi, Patel, Atkinson, & Levine, 2004), and emphasis on building relationships, understanding children's needs, and de-escalation skill development (LeBel & Goldstein, 2005). It stands to reason that the outcome of the S/R reduction program will be affected by the educator's reception of training and ultimately the implementation fidelity of the program, intervention, or model. Therefore, to obtain optimum results, Bower and McCullough (2000) proposed introducing the new model in a protracted, systematic approach so as not to overwhelm staff.

Leadership support of organizational change.

Management philosophy and leadership (Busch & Shore, 2000) are recognized as key factors in the successful initiation and maintenance of new programs (Bower & McCullough, 2000) aimed at reducing the use of S/R. Leadership represents more than introducing new practices to the line staff and suggests that strong commitment to change must flow from senior administrators. Successful reduction in the use of restrictive procedures requires change in staff beliefs and attitudes (LeBel & Goldstein, 2005), and a better understanding of patient care (Petti et al., 2001), personal assumptions and best practices. Resistance to initiatives is a reality in education (Lohrmann, Forman, Martin, & Palmieri, 2008) and represents the concerns and skepticism of staff toward change and

reform. Clearly, change is a difficult and laborious process since customs and practices are rooted in long-established habits (Petti et al., 2001) and generally, staff resist giving up what they have been doing (Mohr et al., 2009). To further complicate the change process, emotionally-charged allegiance increases adherence to familiar procedures long after the ideas with which they were first associated have been discredited (Trice & Beyer, 1993, as cited in Petti et al., 2001) and existing alternatives have proven successful (Mohr et al., 2009). According to Busch and Shore (2000), in uncomfortable situations, habit will influence which intervention is used not evidence.

Educators may experience cycles of apprehension when working with ED students (Reasons, 2005) and consequently they need highly developed support systems (Wagner et al., 2005). When teachers and administrators develop supportive relationships through coaching and nonthreatening feedback (Petti et al., 2001), intensive supervised experiences, and collegial support (Scheuermann, Webber, Boutot, & Goodwin, 2003), a sustained sense of community (Lohrmann et al., 2008) which is essential to programmatic change (Fullan, 2006) is likely to be established. Strong and effective leadership creates a framework for staff to develop faith in the administrative guidance (Fullan, 2002) and enthusiastically implement new initiatives. Therefore, a discerning leader fosters a clear and strong climate in the group (Heider, 1985) and recognizes that staff members need a certain degree of comfort and security (Houston & Sokolow, 2006) to be willing to risk making any kind of sustainable change. Fundamental transformation requires new behaviors to be woven into the culture of a system (Fullan, 2002). Therefore, it falls to senior administrators to create a culture so that evidence-based policies and procedures are embraced and implemented with fidelity (Ryan, 2009).

Use of data to inform decisions.

Even though data collection on S/R is driven by state guidelines and federal mandates, relevant programmatic information can be gained (Busch & Shore, 2000) by indicators that are quantifiable and unambiguous (Petti et al., 2001). The challenge to eliminate restrictive practices requires a systematic study of the process and structure of S/R use. Recording and graphing the number or type of incidents leading to S/R can be an informative method (Petti et al., 2001) for bench-marking and studying variations among programs (Delaney, 2006). For instance, in 2003, Curie (as cited by Smith et al., 2005) attributed the S/R decrease in hospital settings to improved data collection, greater transparency in the way information was used to compare restraint rates between the hospitals, and advocacy groups' demands for regular S/R reports. Additionally, through documentation of each incident as a data point, it is possible to observe emerging programmatic trends. On the individual level, such records can help determine if a person is progressing or needs treatment adjustments (Petti et al., 2001). Using data to evaluate programmatic performance and treatment effectiveness removes subjectivity from judgment decisions which is important considering judgment based on experience has been demonstrated to be imprecise compared to quantitative evaluation based on the same data (Goldberg, 1968, as cited by Petti et al., 2001).

Debriefing after restrictive events.

Episodes of regression and relapse during any change process are expected but are not necessarily an indication of program failure. One way to monitor the process is through debriefing procedures which can inform how caregivers are adapting to altered S/R policy and the extent to which they are incorporating new practices and ideas into

their daily work (Petti et al., 2001). Use of a systematic debriefing process prevents implementation drift (Mordock, 2002) and identifies topics for in-service training, staff meetings and interventions (Petti et al., 2001). Implementation drift refers to the tendency to revert to old habits and procedures over time (Busch & Shore, 2000). Debriefing sessions create opportunities for staff to reflect and dialogue, which helps them reconcile what they think they are doing and what they are actually doing (Busch & Shore, 2000). Petti et al. (2001) emphasized the use of structured, ongoing staff debriefings to develop and practice non-aversive intervention strategies. Relative to S/R, inquiry and consultation after restrictive events has been shown to reduce the incidence of coercive measures by 60 (Donat, 1998) to 77 percent (Singh, 1999).

Language and communication skills are vital to constructive debriefing meetings. Case in point, Petti et al. (2001) documented the imprecision of the language used by staff and stressed the importance of describing behavior and incidents with specificity. Although professionals use jargon as a shortcut for communicating among people working in the field, not everyone is using the same words to mean the same thing (Lutz, 1996). Petti et al. (2001) discovered that staff members were applying the same label to different phenomena, assigning multiple interpretations to a particular term. For example, the word "aggressive" is inexact, often used to describe a multitude of undesirable behaviors. Using a more specific, observable term, such as "hitting" to describe the behavior reduces personal interpretation. Debriefing provides staff with an opportunity to analyze and operationalize common terms (Mohr, 2010) and in turn, better design, implement and assess treatment interventions (Petti et al., 2001). Busch and Shore (2000) illustrate the importance of communication when they investigated intervention

strategies that might impact S/R use. The study revealed that when procedures for operationalizing stages of disruptive behaviors were developed and staff used explicit verbal and behavioral interventions to control the behavior at each stage, there were decreases reported in the number of emergency episodes, the duration of the events, and the number of patients involved in crisis incidents (Busch & Shore, 2000).

Debriefing with patients about restrictive events requires improved communication as well. Mohr (2010) cited the importance of patient's recovering their "voice" in the treatment process and suggested discussing with patients, before an incident occurs, what calms them during a crisis and how to determine when a restrictive event would be concluded. Following an incident, the patient and staff review difficult interactions to identify triggers of aggressive behavior and discuss how these interactions could have been managed in a way that reduces the potential for future outbursts (Delaney, 2006). The goal is to engage the patient in the treatment process as opposed to demanding uncontested compliance (Mohr, 2010). In other words, treatment is something done *with* the client rather than *to* the client.

Educational Settings

At the time Skiba et al. (1997) researched school discipline and inappropriate student behavior, few studies could be found in the literature. However, today there is a large literature regarding positive-behavior support and time-out use in schools; however, studies of S/R use as an educational intervention continue to be rather scarce (Ryan & Peterson, 2004).

The existing literature consistently demonstrates a relationship between child age and use of restraint (Garrison et al., 1990; Goren et al., 1993; Harrell, 2000; Persi &

Pasquali, 1999) with younger students being restrained more frequently. Ryan et al. (2008) speculated that younger students are restrained more frequently because children have fewer coping mechanisms for frustration, staff consider intrusive procedures to be developmentally appropriate to use with younger children, or staff are more hesitant to perform procedures on larger and stronger individuals. Research also showed that younger children were more violent and aggressive and therefore necessitated more restraints (Garrison et al., 1990; Goren et al., 1993; Harrell, 2000). Early studies conducted in various psychiatric settings and residential treatment programs did not show gender to be a strong predictor of physical restraint use among children (Garrison et al., 1990; Goren et al., 1993). However, Persi and Pasquali (1999) established that in the school setting, male students were more likely to be restrained than female students. The disproportionality for students classified with ED, male-to-female ratio of 3.43 to 1 (Coutinho & Oswald, 2005), might account to some degree for the gender-restraint differential. In addition to age and gender, time may be another factor to consider in frequency of S/R. For example, Miller, Walker, and Friedman (1989) found a higher occurrence of restraints on Monday and Friday attributed to “weekend anxiety” on the psychiatric unit. The researchers speculated that because Saturday and Sunday are the least restricted days of the week with activities such as off-unit passes and parental visits, the lack of predictability might exacerbate patient apprehension and undermine feelings of psychological and emotional safety. In addition to determining which children are likely to be restrained and when restraints are most likely to be applied, another factor identified by the literature included *who* is using S/R procedures. In 1989, Miller and colleagues noted that male staff members were more likely than female staff to restrain

children, yet in direct contrast to those earlier findings, Persi and Pasquali (1999) found that female educators initiated more restraints on behaviorally aggressive students than male staff. The increase might be attributed to the steady increase of females in the education and health service fields from five million in the mid 1980's to 10 million in 2010. In fact, the Bureau of Labor Statistics (2011) of the U.S. Department of Labor reported that from 1993 to 2010, the education and health service industry ranked first in employment of women.

A study conducted by Ryan et al. (2008) in a public special day school for students classified as ED utilized a gated school-wide behavior treatment strategy. These procedures required staff to employ interventions from least restrictive intervention (i.e. inclusion time-out) to more restrictive procedures (i.e. seclusion time-out and restraint). All staff received extensive training throughout one school year in conflict de-escalation using a published curriculum. Similar to successful programs implemented in psychiatric settings, each seclusion time out was documented, incidents were debriefed with the director, and discussion on alternative strategies to de-escalate students were held at semi-monthly staff meetings. Review of pre- and post- intervention data showed reductions in seclusion events by 39.4% and physical restraints by 17.6%. In order of frequency, the three primary behaviors identified as requiring seclusion were noncompliance, disruption and physical aggression; while restraint procedures were required for noncompliance, leaving assigned area, and property misuse. Noteworthy, staff reported physical aggression toward staff and peers as the top reason for using restraint; however, actual incident reports revealed that staff rarely used restraint for student aggression. These findings are similar to those from an investigation conducted in

2004, by Ryan and Peterson who reported that even though approximately 70 percent of teachers reported using restraint for physical aggression, review of office discipline referrals did not align with staff reporting.

Another study conducted at an alternative day school for students with severe emotional and behavioral disorders, demonstrated that the use of school-wide positive behavioral interventions and supports significantly reduced the use of S/R (Miller, George, & Fogt, 2005). These researchers reported that as a result of implementing a universal, positive acknowledgement system, physical restraints were reduced from 1,000 to near zero over a four-year period, and remained at that level to the time the report was published in 2005. Similarly, the use of seclusionary time-out was reduced to near zero.

The literature in the area of school-based S/R, though limited, suggests that positive behavior support and de-escalation training may be effective for reducing restrictive procedures. Existing research is promising but clearly, additional studies in the educational setting are needed to provide greater depth and breadth of evidence to substantiate research findings.

Teacher Preparation, Certification and Experience

Research has shown a consistent, positive relationship among teacher preparation, certification, and experience (Peske & Haycock, 2006) and student achievement at the individual, classroom, school building and district levels (Henderson, Klein, Gonzalez, & Bradley, 2005). These factors become more critical when considering the population of students classified as ED who present educators with unique academic and behavior challenges that can negatively influence the teacher's interactions and instruction in the classroom.

Educational Background and Preparation

The American Association for Employment and Education (as cited by Wagner et al., 2005) identified special education and, particularly, behavioral disorders as teaching areas of greatest need in the United States. Despite the shortage of ED teachers, local certification programs do not differentiate or specialize in disability categories and often teachers are not prepared to work with students who have significant special needs. Lack of disability-specific coursework is a noteworthy concern in view of a study (Wagner et al., 2005) which revealed that special educators who work with students with ED need highly developed skills to plan and implement instructional programs that address multiple domains and take into account the reciprocal relationship between behavior challenges and academic achievement. Educators require instructional and behavior management techniques beyond that which is covered in general coursework and generic behavior management classes. More to the point, teachers of students with special needs should know how to implement alternatives to seclusion and restraint (Mohr & Anderson, 2001). In fact, Wagner et al. (2005) found few differences between teachers of student's with ED and their special education colleagues in the content covered in pre-service preparation programs. When Scheuermann et al. (2003) evaluated certification practices across the United States, they determined that while some states offer and require certification in distinct disability areas, most others offer a more global, non-categorical special education certification. These researchers also reported that even though the Council for Exceptional Children has developed standards for special education teachers in all areas except autism, teacher preparation programs regrettably vary in the content, effectiveness and excellence of training (Scheuermann et al., 2003).

The differences in the quality of training becomes a critical issue, especially in light of the study by Darling-Hammond (2000) who found that fully prepared and certified teachers are more successful with students than teachers with inadequate preparation. Carlson's (1996) early work went a step further, establishing that quality pre-service instills a sense of expertise and preparedness. The Study of Personnel Needs in Special Education (SPeNSE) found that, unfortunately, many new special education teachers did not feel confident that they possessed the specific knowledge and skills critical for teaching students with distinct disabilities (Scheuermann et al., 2003; George, George, Gersten, & Grosenick, 1995). From this research, it seems clear that there is a critical need to improve teacher preparation through disability-specific coursework and field experiences.

Experience

Following appropriate teacher preparation and certification, experience is the second factor that improves teacher effectiveness. In fact, most research suggests that teachers are considerably more competent after completing two years on the job and that effectiveness of instruction markedly improves during the first three years of teaching (Peske & Haycock, 2006). Unfortunately, many special education teachers, particularly those teaching students with ED classification, will seek reassignment (Merrell and Walker, 2004) or leave their teaching jobs before celebrating their third anniversary (Hagie, 2001). This finding is significant in light of Busch and Shore's (2000) study which found that staff with less than three years of experience made the most restrictive intervention recommendations. As teachers leave the field before gaining the expertise to be truly effective as an instructor, a dysfunctional cycle of incompetence emerges that not

only perpetuates the use of ineffective behavioral interventions but more importantly, is detrimental to student learning. Henderson and colleagues (2005) reported that overall, ED teachers had fewer years of teaching experience than other special education teachers, were less credentialed than other special education teachers, were less likely to have a master's degree, and more likely to have emergency certification. In effect, the least educated care for the most vulnerable (Mohr, 2010). Consequently, it is crucial that teachers who work with students classified with ED are well trained and continually supported through planned, sustained professional development programs.

Support Systems

Wagner et al. (2005) concluded that ED teachers need advanced skills and more importantly, highly developed support systems to address the relationship between behavior challenges and academic achievement. Similarly, Scheuermann et al. (2003) recommended that in addition to professional development, coaching, and immediate feedback on performance, teachers receive intensive supervised experiences and collegial support. Research also informs that teachers are more likely to make instructional changes if they have frequent and regular support from colleagues, otherwise they will revert to pre-established habits of practice (Cook, Landrum, Tankersley, & Kauffman, 2003). In fact, a knowledgeable mentor may offer specialized support which fundamentally impacts instruction in the classroom and in due course, improves outcomes for teachers (Downey, Steffy, English, Frase, & Poston, 2004). Building a sustainable sense of community is an essential component to programmatic change since it reflects the effectiveness of the leader's relationships with staff (Lohrmann et al.,

2008). Ultimately then, it becomes the responsibility of the supervisor to create a supportive learning community and encourage collegial relationships.

As supported by the literature review for this dissertation, teachers are generally not fully prepared to work with students classified as ED particularly the aggression and noncompliance associated with the disorder. Lacking ED-specific, evidence-based behavioral practices in their instructional repertoire, teachers often resort to using restrictive practices to manage maladaptive behavior. For the purpose of creating better learning environments for students and teachers, it is essential to provide educators with disability-specific training that is integrated with hands-on experiences and continual practice in authentic contexts (Cook et al., 2003). However, the problem of providing the neediest students, those classified with ED, with the best and most experienced teachers requires intensive preparation, time and on-going support from administrators and colleagues.

The Collaborative Problem Solving Model.

Oppositional, noncompliant behavior and aggressive outbursts are of primary concern (Epstein & Saltzman-Benaiah, 2010) in both psychiatric settings and educational environments. However, the literature suggests that staff often lack proficiency at assessing potentially explosive situations and often precipitate aggressive behavior (Mohr & Anderson, 2001). For example, research has shown that staff redirection or limit-setting resulted in more emotional and behavioral disruptions (Greene, et al., 2006) and typically preceded most incidents of physical aggression (Ryan et al., 2004). Possessing advanced skills and highly developed levels of empathy are essential to de-escalate and respond to aggression (Mohr & Anderson, 2001), otherwise staff are predisposed toward

the use of S/R procedures. LeBel et al. (2004) determined that collaborative strength-based programs result in significant reductions in restraint use in psychiatric settings. According to the Collaborative Problem Solving (CPS) model, a comprehensive model of care with particular emphasis on crisis prevention rather than crisis management may inhibit caregivers from using S/R methods on patients as punishment, for the convenience of the program, and to compensate for inadequate staffing (Greene et al., 2006) or insufficient professional development.

The CPS approach is a promising preventative process that has been implemented successfully in psychiatric and therapeutic settings. For instance, in one study, the CPS model produced significant improvements in multiple domains of functioning (Greene et al., 2004). In a subsequent study, after implementation of the CPS model in a child psychiatric unit, Greene and his colleagues (2006) showed a statistically significant decrease in rates of S/R and a remarkable reduction in the use of physical holds lasting less than five minutes. Martin et al. (2008) also obtained noteworthy results after implementation of the CPS model in a similar setting: a reduction in the use of restraints from 263 events to 7 events per year and seclusion incidents declined from 432 to 133 events per year. Given that decreases in restrictive events were more pronounced for use of restraints than for use of seclusion, the researchers suggested that restraint reduction may be a more appropriate first goal for programmatic change.

The CPS model was conceived by Greene (1998) as a psychosocial treatment standard for behaviorally challenging children. The model focuses on helping children and adults learn to resolve conflicts, disputes and disagreements in a collaborative way without the need for application of restrictive procedures (Greene et al., 2006).

Consequently, staff and children create a therapeutic alliance based on integrity (Mohr et al., 2009) and mutual respect. The emphasis is on emotion regulation and developing the child's underlying cognitive skills necessary for problem-solving (Epstein & Saltzman-Benaiah, 2010).

The CPS model includes a common belief about children's aggressive or unsafe behavior which is often contrary to convictions held by many adults. For example, the model proposes that children behave appropriately if they possess the skills to do so. If a child is not behaving appropriately, adults need to identify the barriers in order to effectively intervene (Greene, 1998). Under this assumption, children's noncompliant, aggressive behavior is not viewed as manipulative or willful but rather a form of disability (Epstein & Saltzman-Benaiah, 2010) in which the child demonstrates a lag in critical cognitive skills or has significant difficulty applying these skills when the situational demands surpass the child's capacity to respond (Greene, 2009).

The CPS model was predicated on the fundamental goals of reducing challenging behavior, creating or restoring an empathetic relationship with the child, clarifying what cognitive skills need to be taught, and solving chronic behaviors problems (Greene & Ablon, 2006). These objectives are achieved through two treatment components of the CPS model, assessment and intervention (Greene & Ablon, 2006; Greene, 2009).

Assessment in the CPS model refers to determining the child's specific cognitive deficits underlying maladaptive behaviors and identifying the situational demands that require those thinking skills (Greene & Ablon, 2006). Extensive literature links challenging behavior with deficits in the following global categories of cognitive skills domains: executive skills, language processing skills, emotional regulation, cognitive flexibility,

and social skills (Greene, 2009). Greene and Ablon (2006) developed an assessment tool titled Assessment of Lagging Skills and Unsolved Problems (ALSUP) that can be used with other standardized instruments to help identify lagging cognitive skills. In addition to identifying problem behavior, the ALSUP is designed to be a discussion guide for achieving team consensus about the problem behaviors and designing an intervention plan (Greene, 2009). The second treatment component, namely intervention, involves knowledge of the available response options to manage a child's challenging behavior and deciding which intervention best matches the presenting behavioral circumstances (Greene & Ablon, 2006). Greene (1998) established that adults respond to challenging behaviors in three fairly predictable ways which he designated Plan A, Plan B, and Plan C. The first response, a very common authoritarian approach used by adults, is Plan A which models a 'might makes right' principle for children (Greene, 2009). The difficulty with Plan A is that the manner in which redirection (Ryan et al., 2004) or limits are presented by adults tend to intensify the child's aggressive behavior (Greene et al., 2006). In Plan C, adults remove behavioral expectations completely (Greene, 1998). For example, since children may present with a constellation of behavioral challenges, prioritizing issues allows one to address the most maladaptive behaviors first and deal with the less serious problems at another time.

Plan B is the heart of the CPS model and the primary focus of professional development activities. Although Plan B involves three prescribed phases, the treatment may still be flexibly implemented (Kendall et al. 1998). Greene (1998) provided the following format for implementing Plan B: a) the *Empathy/Reassurance* step is used to identify and understand the child's distress about a given issue and provide reassurance

that the problem will be resolved in a mutually agreed upon manner; b) the *Define the Problem* step presents the adults' concerns on the same issue; and c) the *Invitation* step invites the child to brainstorm solutions to the problem with the adult and agree on a realistic and shared plan of action. It is necessary to include each step in precise order, but the dialogue content and duration of each step is determined by the adult and student relative to the particular situation. Greene (1998) identified two situations where Plan B is appropriate. The first takes place in the midst of challenging behavior and is more useful for crisis management/de-escalation (Emergency B) and the second type attempts to prevent crisis before maladaptive behavior recurs (Proactive B). Whether using Emergency Plan B or Proactive Plan B, the process is identical although the purpose and outcome may be distinctive.

Communication is a key factor of successful implementation of the CPS model both in reinforcing commitment to change and preventing implementation drift (Delaney, 2006; Mordock, 2002). Intervention practice is improved through debriefing activities immediately following a restrictive incident and on-going, regularly scheduled activities (Scheuermann et al., 2003) designed to reflect on the implementation integrity of intervention practice (Fogt & Piripavel, 2002). Procedures for staff debriefing following a crisis are a valuable tool for critiquing incident response and reviewing the outcome of the procedures (Smith et al., 2005). For that reason, in many CPS sites, a formal review process is immediately applied whenever use of restraint or seclusion occurs (Delaney, 2006).

Summary

The literature review examines the topics considered to be essential to understanding S/R and provides evidence to support the significance of this proposed study. Review of the classification criteria and characteristics of students classified with an emotional disturbance (ED) reveals that the externalizing behaviors and risk factors exhibited by these students increase the probability of seclusion and restraint use in the school setting. Despite a lack of research to support the effectiveness of S/R as an educational intervention and the extant body of literature describing the potentially harmful psychological, emotional and physical consequences of the procedures, these unsafe practices continue to be utilized. The dangerous nature of restrictive procedures has attracted congressional attention which has influenced the introduction of federal legislation to eliminate the use of S/R while increasing the use of positive evidenced based intervention practices. Devoid of federal guidance, Pennsylvania has taken the initiative to address concerns relative to S/R by adopting stringent guidelines and policies. The challenge is implementing the guidelines and transforming theory into practice.

The S/R literature is predominantly derived from the numerous studies conducted in the psychiatric and medical fields. Few S/R studies have been conducted in school environments but the studies from other fields may provide educators with intervention options that can be successfully replicated in the educational settings. A promising pre-emptive approach, which has successfully reduced the use of S/R in psychiatric and therapeutic settings, is the CPS model. However, in addition to advanced behavioral intervention skills, teachers working with students classified as ED also need sustained

support from educational leaders and colleagues to create better learning environments for students.

In summary, this literature review justifies the importance of this study and details the foundational elements on which the study design for this project was developed. Chapter 3 describes the methodology of this inquiry which includes the sample, the staff training, the instrumentation, the procedures, and the data sets analyzed.

CHAPTER 3

METHODOLOGY

Introduction

The overarching purpose of this study was to establish a relationship between the implementation of the Collaborative Problem Solving (CPS) model and a reduction in student externalizing maladaptive behaviors as well as decreases in incidents of seclusion and restraint (S/R) in two segregated schools in northwestern Pennsylvania. The nature of this program evaluation research necessitated a quasi-experimental, pre-test-post-test research design. The situational context of the segregated schools precluded random assignment of the student sample to a treatment or control group because the sample was naturally formed (Creswell, 2009) and the CPS model is designed to be implemented as a universal prevention/intervention system (Greene & Ablon, 2006) that includes all students and educational staff. Therefore, “success” was established through archival pre- and post intervention behavior data. Additionally, considering the severely limited human and fiscal resources of the organization, the study offered administrators a practical, expedient assessment of the program’s effectiveness in an effort to inform and improve student services.

This chapter describes the methodology proposed for the research project. In the first section, descriptive data relative to the sample is provided including demographics, site information and staff training. The second section explains the data collection tools and procedures currently being used in the community school programs. Specifically, the Administrative Discipline Referral (ADR) form as well as the psychometric properties of the Behavior Assessment System for Children-2 (BASC-2) and the Teacher Rating Scale

(TRS) component of the BASC-2 is explored. The next section describes the data collection process that was utilized in the study, followed by the data analysis procedures including statistical methods. The chapter concludes with a summary of the methodology used in the research project.

Participants

The nonrandom sample was comprised of students enrolled in two special education schools located in large communities in northwestern Pennsylvania. The enrollment at the conclusion of the 2010-2011 school year was 69 students in School A and 26 students in School B. The schools serve students, kindergarten through twelfth grade, from neighboring school districts. The ethnic composition of the population in School A was 95 percent Caucasian, two percent African American, and three percent ‘other’; males comprised more than half of the student population (66%). The population in School B was 97 percent Caucasian and three percent African American; males comprised nearly three quarters of the student population (73%). All students were evaluated and classified as ED by their referring home school district as per Chapter 14 Regulations of the Pennsylvania Department of Education (PDE) and received one-hundred percent of their special education program in this restrictive school-based environment. School A employed eight teachers, 11 paraprofessionals, three related service providers, one interpreter for the deaf/hard of hearing (assigned to a teacher), three auxiliary support staff and one administrator. School B employed four teachers, eight paraprofessionals, three related service providers, two auxiliary support staff and one administrator.

Staff Training

Prior to the start of each school year, all educational staff in the organization who work directly with students are required to attend a full-day workshop presented by teams of certified “Safety Mechanics” instructors. The training module focuses on de-escalation strategies and describes evasive/defensive techniques. The primary purpose of the training is to provide better pre-restraint strategies and, if needed, to use restraint techniques in a more systematic way (Kassi, personal communication, March 3, 2011). The format includes lecture, modeling, coaching and participant practice of physical interventions. The safe physical intervention techniques introduced to staff were originally developed by Norbert Belanger who in the late 70’s/early 80’s applied his experience in the martial arts to develop a methodology to manage acting-out behaviors and conceived the term “Safety Mechanics” (JKM Training, 2011). At the completion of the training, participants receive a certificate of participation.

Selection and implementation of the Collaborative Problem Solving (CPS) model was an outcome of book reviews, webinars and intensive off-site training. A core emotional support committee comprised of three administrators, four school psychologists, four social workers, one guidance counselor, and two positive behavior support coaches participated in book reviews using *The Explosive Child* (Greene, 1998) and *Treating Explosive Kids: The Collaborative Problem-solving Approach* (Greene, & Ablon, 2006) during the two consecutive school years prior to implementation of the model. In the spring of 2010, a full-day webinar on CPS was attended by core committee members as well as staff selected by the administrators. In the summer of 2010, two administrators, one school psychologist, and a behavior coach participated in an

intensive three-day CPS training in Boston, Massachusetts to gain proficiency in the model components and design a professional development plan for the 2010-2011 school year.

The 2010-2011 school year was the first year of implementation of the CPS model in the schools and educational staff participated in mandatory professional development provided by school administrators and the training and consultation staff of the organization. Staff-wide training of the model began in late August of 2010 and was completed by the end of November, 2010. The initial two-hour overview combined staff from School A and B and introduced the theoretical underpinnings of the model, including current research that supports the positive implementation outcomes of CPS. In School A, four 30-minute after school sessions were held during September and November, 2010 to provide the foundational base of the model's framework and disseminate written materials. The formal training period concluded with a three-hour training seminar which focused on explicit instruction in the sequential phases and prescribed language of the model, video examples of the technique, opportunities for guided practice, modeling and role plays, and review of paperwork associated with implementation. School B presented the same content during two half-day workshops, one in October and another in November. All training and follow-up sessions were planned to coincide with pre-scheduled professional development (Act 80) days and regularly scheduled afterschool meetings to maximize opportunities for all staff to participate in training and, more importantly, minimize interruptions to student learning.

During the implementation interval, a six-month period beginning in late December, 2010, after-school discussions were scheduled with training personnel to

target specific students and their behavior incidents within the framework of the CPS model. These sessions were expected to provide staff with an opportunity to reflect on practices and offer peer support through encouragement and critical feedback (Wagner, et.al, 2006) while also affording an opportunity for trainers to assess the efficiency of the process and make adjustments as necessary. An incentive to earn continuing education credit, ACT 48 hours, was made available by School A and B building administrators. In School A, attendance at after-school sessions was not optional, however compensatory time was offered in addition to ACT 48 hours. In School B the sessions were mandatory for teachers and optional for support staff. Attendance at each session was monitored using sign-in sheets.

Instrumentation

Administrative Discipline Referral

Behavior guidelines in the community schools necessitate that following serious behavior infractions requiring the involvement of the school administrator, one of the staff is required to complete an ADR detailing the event and all staff involved in the incident (see Appendix A). The individual ADR information is then entered into a secure, password-protected web based software program that provides accurate, real-time, practical information for decision-making in relation to school systems, classroom procedures and individual students. Variables coded on the ADR form include: the behavioral infraction, location of the incident, time of day, other persons involved, possible student motivation, and consequence.

Other data included are frequency and duration of S/R incidents. These procedures are differentiated in the consequence section of the ADR form. If time-out is

utilized, staff specify the level (Level III, the most restrictive, is seclusion), time started and ended, and duration. The restraint category includes more detailed information such as whether the restraint was used as per the student's Individualized Education Program (IEP) or as a result of an emergency, the specific restraint and evasive/defensive technique used, the time the technique started and ended, the duration, and whether an injury to student or staff occurred.

According to established behavioral definitions adopted by the educational organization, the top three target behaviors are defined as follows: (a) *aggression*: actions involving serious physical contact where injury may occur (hitting, punching, hitting with an object, kicking, hair pulling, scratching, etc.); (b) *noncompliance*: refusal to follow directions, talking back and/or socially-rude interactions; and (c) *disruption*: behavior causing an interruption in a class or activity such as sustained loud talk, yelling, or screaming; making noise with materials; horseplay or roughhousing; and/or sustained out-of-seat behavior. Restrictive procedures are defined as: (a) *seclusion/time-out level III*: a restrictive form of timeout that removes students from the classroom setting, placing them in an area where they are physically prevented from leaving; and (b) *restraint*: The application of physical force, with or without the use of any device, for the purpose of restraining the free movement of a student's or eligible young child's body (22 Pa. Code 14.133 (b)).

Accuracy of the ADR data was judged to be high as a result of the multiple safeguards that are in place. For example, ADR forms are completed immediately following a behavioral incident and reviewed with the building administrator. The ADR form is faxed directly to a secretary who has been designated exclusively for behavior

data entry, and entered into the web based information system which is stored on a secured server. Original ADRs are sent weekly to the secretary who ensures that each ADR has been recorded into the system. The password-protected system is accessible to six individuals: the data entry secretary, the computer programmer and supervisor, and three behavior coaches assigned to the special education program. Data are reviewed monthly by the building level team and accuracy of the information is informally assessed while programmatic and student needs are evaluated.

The Behavior Assessment System for Children-2

The Behavior Assessment System for Children-2 (BASC-2) is a revision of the Behavior Assessment System for Children (BASC) which was originally normed in 1992. The original BASC has been cited in over 125 research studies many of which were longitudinal and large scale (Reynolds & Kamphaus, 2004). The instrument developers report that the “BASC-2 is expected to surpass the BASC in the evaluation of programs and of interventions at both the individual and program levels” (Reynolds & Kamphaus, 2004, p.9). The BASC-2 is designed to assist in differential diagnosis and educational classification of emotional and behavioral disorders of children ages 2 through 21 years (Reynolds & Kamphaus, 2004). The advantage of using this particular standardized assessment tool is the well-established validity and reliability, rapid turnaround time, and cost effectiveness.

The BASC-2 provides normative T-scores for each scale which are important for interpretation. T-scores are standard scores with a mean of 50 and a standard deviation of 10. A descriptive label may be assigned to each scale and composite T-score using a classification system (Table 1). Reynolds and Kamphaus (2004) describe adaptive scales

as positive student traits that can be capitalized on in the course of intervention while clinical scales, on the other hand, indicate problem behavior. Average T-scores for adaptive and clinical scales fall between 41 and 59. Scale scores in the at-risk range are between one to two standard deviations from the mean which corresponds to a T-score between 60 and 69 on the clinical scales and 31 through 40 on the adaptive scales. At-risk scores indicate developing problem behaviors that should be closely monitored. Scores in the clinically significant range, which are two or more standard deviations from the mean, indicate a high level of maladaptive behavior (T-score 70 and above) or a deficiency in adaptive behaviors (T-score 30 and below). For example, students with an educational classification of ED typically have more than one T-score in the at-risk or the clinically significant range on the clinical and adaptive scales.

Table 1

Score Classification on the BASC-2

Adaptive Scales	Clinical Scales	T-Score Range
Very High	Clinically Significant	70 and above
High	At-Risk	60-69
Average	Average	41-59
At-Risk	Low	31-40
Clinically Significant	Very Low	30 and below

Behavior Assessment System for Children, Second Edition (BASC-2). Copyright © 2004 NCS Pearson, Inc. Reproduced with permission. All rights reserved.

The manual contained the following information on reliability and validity of the instrument (Reynolds & Kamphaus, 2004): The BASC-2 was standardized during an eighteen month period beginning in August of 2002. The normative sample included over 13,000 teacher, parent and student rating scale cases from ages two through 18 years. The sample of children was representative of the 2001 U.S. population with

respect to gender, socioeconomic status, race/ethnicity, geographic region and classification in special education. Children were sampled from a variety of settings including public and private schools, mental health clinics and hospitals, and preschools/daycare programs. The BASC-2 provides three validity checks (indexes) designed to insure that educators are not overly negative (F Index), are carefully considering the item content (Response Pattern Index), and are consistent in their response to similar items (Consistency Index). The authors advise that student profiles flagged to be interpreted with caution require the evaluator to examine the cause for concern by reviewing individual item responses, interviewing the respondent, or observing the student to corroborate the scale scores. Through this investigation the evaluator can determine if compromised validity deems the student profile unusable for interpretation.

There are five components to the instrument which can be used as a total approach or individually: Teacher Rating Scale (TRS), Parent Rating Scale (PRS), Student Self-report of Personality Scale (SRP), a Structured Developmental History form (SDH), and a Student Observation System form (SOS). Given that the TRS component is a critical component of this study, coefficient reliabilities will be described in greater detail in the next section. For the PRS general norm samples, composite score reliabilities are high and range from low to middle .90s for the Adaptive Skills and Behavioral Symptoms Index (BSI), and the middle .80s to middle .90s for Externalizing and Internalizing Problems (Reynolds & Kamphaus, 2004). The SRP general norm samples score reliabilities are also high: middle .90s for Internalizing Problems and the Emotional Symptoms Index (ESI) and in the middle to upper .80s for the School

Problems, Inattention/Hyperactivity, and Personal Adjustments composites (Reynolds & Kamphaus, 2004). The SDH component of the BASC-2 provides a comprehensive review of social, psychological, developmental, educational, and medical circumstances that may be pertinent to the student's diagnosis and treatment plan (Reynolds & Kamphaus, 2004). The SOS is used to record observed positive and negative classroom behaviors in a time sampling format.

Reliability coefficient alphas for the general norm samples of the TRS are very high: in the upper .90s for the BSI, the Externalizing Problems composite, and Adaptive Skills, in the mid .90s for School Problem composite, and the low .90s for the Internalizing Problems composite (Reynolds & Kamphaus, 2004). Reliability coefficients of the individual scales are also high (median values are .88 for children and adolescents ages 6 through 14, and .86 for adolescents ages 15-18.) The most reliable scales for children and adolescents are the Attention Problems and Social Skills scales (mid to low .90s) as well as the scales which comprise the Externalizing Problems domain (Hyperactivity, Aggression and Conduct Problems) with internal-consistency reliability ranging from .90 to .95 (Reynolds & Kamphaus, 2004). Test-retest reliabilities of the BASC-2 TRS composite scales are generally in the mid .80s to low .90s with the exception of Internalizing Problems on the adolescent level (.78). Inter-rater reliabilities of composite scores for children and adolescents were not as strong as the alpha coefficients and the test-retest reliabilities with a range from .45 to .70. Possible explanations provided by the authors for the variance included frequent class changes and one teacher within each classroom (Reynolds & Kamphaus, 2004).

The TRS component of the BASC-2 measures both adaptive skills and behavior problems in the school setting. The form contains 139 behavioral descriptors that are rated on a 4-point scale of frequency ranging from Never to Almost Always. Educators are provided with explicit instructions on administration of the TRS and are generally able to complete a student's rating scale in 10 to 15 minutes. The TRS provides a broad composite, the Behavioral Symptoms Index (BSI) which assesses the overall level of problem behaviors and considers the broad domains of Externalizing Problems, Internalizing Problems, School Problems and Adaptive Skills (Reynolds & Kamphaus, 2004). Each broad domain is comprised of subscales which yield individual scores (Table 2). Additionally, there are optional content scales (i.e. Anger Control, Emotional Self-Control, and Negative Emotionality) that expand coverage and are more syndrome specific (Reynolds & Kamphaus, 2004) than the primary scales.

Teachers routinely complete the TRS of the BASC-2 for every student in the fall and spring of each school year. The school psychologist responsible for the program distributes and collects the rating scales, then enters the data into a computer-based scoring system which generates student profiles and calculates validity indexes. During team meetings, student profiles are reviewed to identify student need relative to standard protocol treatment interventions as well as pre-post intervention data.

Table 2

BASC-2 Teacher Rating Scale Composite Scales

Externalizing Problems	Internalizing Problems	School Problems
Hyperactivity	Anxiety	Learning Problems
Aggression	Depression	Attention Problems
Conduct Problems	Somatization	
Adaptive Scales	Content Scales (optional)	Behavior Symptoms Index
Adaptability	Anger Control	Hyperactivity
Social Skills	Bullying	Aggression
Leadership	Emotional Self-control	Depression
Study Skills	Negative Emotionality	Attention Problems
Functional Communication	Developmental Social Disorders	Atypicality
	Executive Functioning	Withdrawal
	Resiliency	

Note. Behavior Assessment System for Children, Second Edition (BASC-2). Copyright © 2004 NCS Pearson, Inc. Adapted with permission. All rights reserved.

The TRS may be interpreted with reference to clinical or general norm samples. The instrument developers note that clinical norms are beneficial when a student's problems are extreme in comparison to the general student population (Reynolds & Kamphaus, 2004). Due to the severity of the behaviors observed in a setting such as a segregated school for students classified as ED, rating scales are generally much higher than the general youth population. Therefore, ratings scales in these special education programs are interpreted with clinical norms to compensate for ceiling effect and also facilitate discrete differential diagnosis of behavior problems. However, for the purpose of this study, general norms were used as the unit of measure for success. The rationale for this decision is based upon the objective to progress students closer to the general norms by decreasing maladaptive behavior and increasing adaptive skills, thereby reducing the need for a highly restrictive special education placement.

Procedures

This study used two separate existing electronic data sources to test for relationships between the implementation of the CPS model and the identified variables (incidents of aggression, noncompliance and disruption; frequency and duration of S/R; and standardized measures of externalizing behaviors). The data sources discussed below are routinely gathered to track student behavior in the special education schools. Because the study used retrospective aggregate data, informed consent was not obtained. Each student's record was de-identified, assigned a unique identification number, and contained information up to 50 variables. Data (graphs, pivot tables, and de-identified BASC-2 student profiles) were stored in a secured file cabinet, while all electronic data were housed on a password-protected laptop and password-protected back-up jump drive.

Data Source One

Aggregate monthly and yearly ADR data for the 2009-2010 and 2010-2011 school years were obtained in an electronic format and converted into SPSS files for all students at the conclusion of the 2010-2011 school year. The data reviewed included: the frequency and duration of seclusion; the frequency and duration of restraint events; and the frequency and type of behavioral infraction. The frequency of seclusion, restraint and behavioral infractions (aggression, noncompliance and disruption) were entered as a nominal code. The duration variables for both seclusion and restraint were assigned nominal codes of one through four (events lasting one to five minutes, events lasting six to 10 minutes, events lasting 11 to 15 minutes, and events lasting more than 15 minutes, respectively).

Data Source Two

To address the lack of standardized measures of externalizing behaviors noted in the literature (Martin et al., 2008), BASC-2 subscale and composite T-scores from two separate administrations (October 2010 and May 2011) were obtained from the program's school psychologist in an electronic export file. Only the externalizing subscale T-scores (Hyperactivity, Aggression and Conduct Problems), the Externalizing Problems composite T-score, and the BSI were utilized in this study since these are areas targeted for change by the CPS model as well as the maladaptive behaviors most often associated with S/R. Additionally, the BASC-2 validity indexes were assigned a code for acceptable (1), caution (2), and extreme caution (3). Pre-analysis screening of the data included verifying data accuracy by reviewing the range of values and coded values, as well as examination of missing data and patterns of missing data.

Data Source Three

Five additional variables that describe the sample were accessed through existing student records and assigned ordinal codes prior to entry into SPSS. For example, prescribed psychotropic medication, participation in community mental health services, and involvement with the legal system were each coded with a 1 (present) or 2 (not present). Eligibility for free reduced lunch was coded free reduced (1) or full price (2). The gender variable was assigned a code for male (1) and female (2).

Implementation Fidelity

During the implementation phase, a simultaneous process was initiated to revise and update documentation that incorporated the principles of the CPS model (specifically, identification of pathways, triggers, lagging skills, and ensuing

interventions) but still incorporated legal and institutional requirements. Following an administrative discipline referral that involved S/R, the educator completes a Proactive Plan B worksheet (see Appendix B) with the student which targets the problem behavior that resulted in an ADR. The completed Plan B form is attached to a copy of the ADR and placed in a folder secured by the school secretary. The procedure was designed to minimize the paperwork involved in data collection thereby insuring teachers were not overwhelmed by the process and, as a result, more likely to implement the CPS model. Fidelity of implementation was monitored by matching an ADR that resulted in S/R with a subsequent Proactive Plan B sheet, at least eight out of ten times. Other informal safeguards to implementation fidelity were also examined: monthly ADR data, attendance sheets, discussion notes for after-school CPS meetings, and spot review of Proactive Plan B worksheets.

Data Analysis

The first analysis of data was run with all ADR data having been entered into PASW (version 18.0) SPSS for Windows. Archival behavioral ADR data were screened for cases with unusual or extreme values (Mertler & Vannatta, 2010); however, outliers from this data set were not removed. The decision for maintaining these cases was based upon the student population who, by nature of their classification, demonstrate anomalous behavioral excesses. Descriptive statistics for School A and School B included traditional values: frequencies, percentages, means, standard deviations and ranges. Frequency comparisons and a series of Wilcoxon Signed Rank Tests were conducted to compare end-of-year data points from the 2009-2010 and 2010-2011 school year.

The second analysis was run with all BASC-2 T-scores entered into PASW (version 18.0) SPSS for Windows. This analysis utilized a series of dependent samples T-tests to compare BASC-2 subscale and composite T-scores from the screening in October, 2010, and the subsequent screening in May, 2011. Students enrolled in the community school after November 1, 2010 or withdrawn from the program before May 1, 2011 were excluded from the sample. The decision for omitting cases was based upon the lack of pre-intervention or post-intervention data points for comparison. Additionally, student profiles identified with questionable validity indexes, “caution” or “extreme caution”, were reviewed on a case-by-case basis and compared with ADRs to determine if the rating scale was appropriate to be included in this data set or if compromised validity indicated a need for removal from the data set. Descriptive statistics included frequencies, percentages, means, standard deviations and ranges.

The third analysis determined if there was an interaction between the variable outcomes on the BASC-2 (Hyperactivity, Aggression, Conduct Disorder, Externalizing Problems and the Behavior Symptoms Index) and the five additional variables (prescribed psychotropic medication, participation in community mental health services, involvement with the legal system, eligibility for free reduced lunch, and gender) which were compared through two-way repeated measures analyses of variance (ANOVAs) for School A and School B.

CHAPTER 4

RESULTS

Introduction

The intent of this research project was to evaluate the impact of a scientifically proven alternative to seclusion and restraint (S/R) for managing challenging behavior, on student aggression and the use of restrictive procedures in two private school settings designed to serve the special needs of students classified as ED. Specifically, through review of archival data, the design of this study assessed whether staff training that emphasized positive behavior management and de-escalation of aggression effectively decreased student aggression and reduced the number of S/R procedures performed on students. The results of the analyses, organized by research questions, are presented in this chapter.

Research Sample Characteristics

The nonrandom sample was comprised of students, kindergarten through twelfth grade, enrolled in two special education schools located in large communities in northwestern Pennsylvania. All students were evaluated and classified as ED by their referring home school district as per Chapter 14 Regulations of the Pennsylvania Department of Education (PDE) and received one-hundred percent of their special education program in this restrictive school-based environment. A summary of student sample characteristics (Table 3) indicates that the majority of the populations in School A and School B were predominantly white (95% and 97%, respectively) and male (66% and 73%, respectively). Additional descriptive data from the school records revealed the following: approximately 79 percent of the students in School A and 89 percent of

students in School B received a free or reduced lunch; more than 88 percent of the students in School A and 81 percent of students in School B were prescribed psychotropic medication; 95 percent of the students in School A and 77 percent in School B were involved with community mental health services, and 21 percent of the sample in School A and 15 percent of the sample in School B had been involved with the legal system.

Table 3

Comparison of Student Sample Characteristics

		School A ^a	School B ^b
		n	n
Gender	Male	42	19
	Female	21	7
Ethnicity	Caucasian	60	25
	African American	1	1
	Other	2	0
Supplementary	Received free reduced lunch	50	23
	Prescribed psychotropic medication	56	21
	Involved with legal system	13	4
	Involved with community mental health services	60	20

^an= 63. ^bn = 26.

There were 69 students in the original data sample of School A. Six students were removed prior to running pre-analysis screening given that the teacher admittedly did not implement the intervention model during the school year. Of the 63 remaining

students in School A's sample, 43 had pre-and post-intervention ADR data points and 41 had pre- and post-intervention BASC-2 scores for comparison. School B included 26 students in the original sample. Twenty-one students had pre- and post-intervention ADR data points and 23 had fall and spring BASC-2 scores.

Research Question 1

After implementation of the CPS model, were there fewer behavioral infractions of physical aggression, noncompliance, and disruption?

Table 4 compares the most common behavioral infractions reported in School A and School B during subsequent school years. Aggregate end-of-year data were used for comparisons. Both schools had an increase in total student enrollment of five students from one school year to the next, but only students enrolled during the 2009-2010 and 2010-2011 school year were included in the analysis. A frequency comparison of behavioral infractions at School A (n = 43) revealed a reduction in events of physical aggression (58%) and noncompliance (17%); however there was a negligible increase in the incidents of disruption. School B (n = 21) demonstrated a marked decrease in the incidents of physical aggression and noncompliance (80% and 63%, respectively), and a slight decrease in incidents of disruption.

Table 4

Frequency of Primary Behavioral Infractions

	School A ^a		School B ^b	
	2009-2010	2010-2011	2009-2010	2010-2011
Physical Aggression	14	6	82	17
Noncompliance	18	15	40	25
Disruption	5	7	11	8

^an= 43. ^bn = 21.

The ordinal data for School A and School B were analyzed using a non-parametric statistical comparison. Wilcoxon Signed Ranks Test results showed that implementation of the CPS model in School A did not elicit statistically significant changes in incidents of aggression ($Z = -1.795, p = .073$), noncompliance ($Z = -.403, p = .687$) or disruption ($Z = -.587, p = .557$). However, in School B there was a statistically significant decrease in the incidents of aggression following implementation of the CPS model ($Z = -2.104, p < .05$). The model did not elicit statistically significant changes in incidents of noncompliance ($Z = -.045, p = .964$) or disruption ($Z = -.707, p = .480$).

Table 5 summarizes the number of students comprising the population in the analysis. In School A, ten students showed a reduction and four students showed an increase in the number of documented aggressive incidents. There was no change for 29 students. Relative to noncompliance, eight students exhibited a decrease in incidents, seven showed an increase and 28 remained the same. Disruption was explained by four students exhibiting fewer events, four showing more events, and 35 with no change. School B showed student change in aggression events. Twelve students demonstrated decreases in incidents while six showed increases. Three showed no change. Noncompliance was marked by five students who displayed more incidents, six who showed a decrease and ten who stayed the same. Relative to disruption incidents, three students exhibited a decrease, two showed an increase, and 16 remained the same.

Table 5

Comparison of 2010-2011 Student Population Relative to Behavior Infraction

		School A ^a	School B ^b
		N	N
Physical Aggression	Negative Ranks	10	12
	Positive Ranks	4	6
	Ties	29	3
Noncompliance	Negative Ranks	8	5
	Positive Ranks	7	6
	Ties	28	10
Disruption	Negative Ranks	4	3
	Positive Ranks	4	2
	Ties	35	16

^an= 43. ^bn = 21.**Research Question 2**

After implementation of the CPS model, was there a reduction in externalized behavior as measured by a standardized behavior rating scale?

In School A one student was considered for omission due to an ‘extreme caution’ warning on the F index (overly negative rating of the student) of the spring 2011 data; however, the index was substantiated through examination of the student’s excessive 2010-2011 ADR referrals. A paired-samples *t*-test ($n = 41$) was calculated to compare the mean pre-intervention and post-intervention BASC-2 T-scores for Hyperactivity, Aggression, Conduct Problems, Externalizing Problems and the overall Behavioral Symptoms Index (Table 6). Notably, there was an increase in all mean T-scores included in the analysis. Further examination reveals that, with the exception of Aggression and Externalizing Problems in School A, the mean T-score increases did not change the score

classification of the clinical scales. Aggression and Externalizing Problems as measured by the BASC-2 increased from an ‘average’ to an ‘at-risk’ score classification. The differences from pre- to post-intervention mean T-scores were significant for Hyperactivity ($t(40) = -2.296, p < .05$), Aggression ($t(40) = -2.866, p < .05$), and Externalizing Problems ($t(40) = -2.839, p < .05$). The mean T-score differences for Conduct Problems ($t(40) = -.948, p > .05$) and the Behavior Symptoms Index ($t(40) = -1.933, p > .05$) were not statistically significant.

Table 6

Pre- and Post-intervention BASC-2 Scores in School A

		BASC-2 Score			
		Mean	Classification	t	p
Pair 1	F10 Hyperactivity	60.27	At-risk	-2.296	.027*
	S11 Hyperactivity	62.78	At-risk		
Pair 2	F10 Aggression	58.29	Average	-2.866	.007*
	S11 Aggression	61.20	At-risk		
Pair 3	F10 Conduct Problems	57.80	Average	-.948	.349
	S11 Conduct Problems	58.56	Average		
Pair 4	F10 Externalizing Problems	59.41	Average	-2.839	.007*
	S11 Externalizing Problems	61.56	At-risk		
Pair 5	F10 Behavior Symptoms Index	62.49	At-risk	-1.933	.060
	S11 Behavior Symptoms Index	64.80	At-risk		

Note. F10 = fall scores 2010. S11= spring scores 2011.

n= 41.

* $p < .05$, two tailed.

There were 26 students in the sample for School B. In this analysis six students were removed from analysis due to a lack of post-intervention data points for comparison. Additionally, three students were omitted due to an ‘extreme caution’ warning on the F index (overly negative rating of the student) of the spring 2011 data

which could not be substantiated through examination of the student's 2010-2011 ADR referrals. A paired-samples *t*-test ($n = 17$) was calculated to compare the mean pre-intervention and post-intervention BASC-2 T-scores for Hyperactivity, Aggression, Conduct Problems, Externalizing Problems and the overall Behavioral Symptoms Index (Table 7). Mean T-scores of the clinical scales showed increases; however only the BSI changed score classification from an 'at-risk' to a 'clinically significant' classification. Statistically, no significant difference from pre-intervention to post-intervention was found for Hyperactivity ($t(16) = -.034, p > .05$), Aggression ($t(16) = -.602, p > .05$), Conduct Problems ($t(16) = -.020, p > .05$), Externalizing Problems ($t(16) = -.254, p > .05$), or the Behavior Symptoms Index ($t(16) = -1.371, p > .05$).

Table 7

Pre- and Post-intervention BASC-2 Scores in School B

		Mean	BASC-2 Score Classification	t	p
Pair 1	F10 Hyperactivity	67.59	At-risk	-.034	.973
	S11 Hyperactivity	67.71	At-risk		
Pair 2	F10 Aggression	65.18	At-risk	-.602	.556
	S11 Aggression	67.12	At-risk		
Pair 3	F10 Conduct Problems	63.24	At-risk	-.020	.984
	S11 Conduct Problems	63.29	At-risk		
Pair 4	F10 Externalizing Problems	66.47	At-risk	-.254	.803
	S11 Externalizing Problems	67.29	At-risk		
Pair 5	F10 Behavior Symptoms Index	67.12	At-risk	-1.371	.189
	S11 Behavior Symptoms Index	71.12	Clinically Significant		

Note. F10 = fall scores 2010. S11= spring scores 2011.

$n = 17$.

* $p < .05$, two tailed.

Research Question 3

After implementation of the CPS model, were there fewer events and shorter periods of seclusion and physical restraint?

Frequency comparisons of seclusion incidents from the 2009-2010 and 2010-2011 school years were conducted using aggregate end-of-year ADR data. Table 8 indicates that following implementation of the CPS model, School A (n = 43) generally showed negligible increases (one to three incidents) in the frequency and duration of seclusion events. School B (n = 21) showed some change in seclusionary procedures after implementation of the model. For example, even though the total number of seclusion incidents showed a minimal decrease (21 to 19), seclusion lasting less than 5 minutes was reduced by more than half (14 to six events). Increases were noted in the duration of all seclusion events lasting over five minutes, with the largest increase in the number of seclusions lasting between six and ten minutes (four to eight).

Table 8

Frequency and Duration of Seclusion Incidents

Seclusion	School A ^a		School B ^b	
	2009-2010	2010-2011	2009-2010	2010-2011
Less than 5 minutes	2	3	14	6
6 to 10 minutes	2	5	4	8
11 to 15 minutes	8	2	1	2
Over 15 minutes	15	18	2	3
Total Events	27	28	21	19

^an = 43. ^bn = 21.

Table 9 summarizes the frequency and duration comparisons of restraint incidents from the 2009-2010 and 2010-2011 school years using aggregate end-of-year ADR data. In School A, frequency and duration of restraint was reduced by one incident. The most notable changes occurred in the frequency and duration of restraint practice at School B. There was a 68% decrease in the total number of restraint events reported following implementation of the CPS model. The number of restraints lasting less than five minutes and the number of restraints lasting six to ten minutes decreased by 69% and 75%, respectively. Post-intervention data revealed fewer restraints lasting over 11 minutes, and the decreases, while encouraging, were less dramatic (ten incidents reduced to five).

Table 9

Frequency and Duration of Restraint Incidents

Restraint	School A ^a		School B ^b	
	2009-2010	2010-2011	2009-2010	2010-2011
Less than 5 minutes	9	9	42	13
6 to 10 minutes	0	0	20	5
11 to 15 minutes	0	0	6	5
Over 15 minutes	1	0	4	0
Total Events	10	9	72	23

^an = 43. ^bn = 21.

The Wilcoxon Signed Ranks Test compared the pre-intervention and post-intervention incidents of seclusion for School A and B. Table 10 reveals that no significant difference was established for the total number of seclusion incidents in School A ($Z = -1.550, p = .121$) or School B ($Z = -.616, p = .538$). Furthermore, due to the diminutive changes in the duration of seclusion incidents for School A and B, the

Wilcoxon Signed Ranks Test did not yield meaningful data for interpretation and, consequently, were not included in the statistical analysis.

The Wilcoxon Signed Ranks Test compared the pre-intervention and post-intervention incidents of restraint for School A and B. According to Table 10, School A did not demonstrate a statistically significant change in the total number of restraints events ($Z = -.577, p = .564$). Once again, the changes in the duration of restraint incidents for School A were negligible and therefore Wilcoxon Signed Ranks Tests were not included in this analysis. On the other hand, School B established a statistically significant difference in the total number of incidents of restraint ($Z = -2.499, p < .05$) and noteworthy changes were revealed in duration of events as well.

Table 10

End-of-year Comparison of Total Seclusion and Restraint Incidents

		Seclusion 2010-2011	Restraints 2010 - 2100
School A	Z	-1.550	-.577
	p	.121	.564
School B	Z	-.616	-2.499
	p	.538	.012*

* $p < .05$, two tailed.

In School B there were statistically significant decreases noted for the number of restraints lasting less than five minutes ($Z = -2.313, p < .05$), the number of restraints lasting between six and ten minutes ($Z = -2.058, p < .05$), and the number of restraints lasting more than 15 minutes ($Z = -2.000, p = .05$). Although a decrease was also noted in the number of restraints lasting between 11 and 15 minutes, the change was not statistically significant ($Z = -1.732, p = .083$).

Table 11 summarizes the number of students in School B comprising the population in the analysis (n=21). According to the Wilcoxon analytical comparison of restraints lasting less than five minutes, seven students showed decreases, one student showed an increase, while 13 remained the same. Six students showed decreases in restraints lasting six to ten minutes, one exhibited an increase and 14 did not change. Restraints lasting 11 to 15 minutes showed three cases where the number decreased and 18 students who stayed the same. Four students showed decreases in the number of restraints lasting over 15 minutes but 17 demonstrated no change.

Table 11

School B Comparison of 2010-2011 Student Population Relative to Restraint Duration

	Restraint Duration			
	< 5 minutes	6 to 10 minutes	11 to 15 minutes	15 minutes >
	N	N	N	N
Negative Ranks	7	6	3	4
Positive Ranks	1	1	0	0
Ties	13	14	18	17
Total	21	21	21	21

Research Question 4

Was there an interaction between the Behavior Assessment Scale for Children-2 (BASC-2) outcomes (Hyperactivity, Aggression, Conduct Problems, Externalizing Behavior Problems and the Behavior Symptoms Index) and the variables of gender, eligibility for free reduced lunch, psychotropic medication, participation in community mental health services, and involvement with the legal system?

Two-way repeated measures analyses of variance (ANOVAs) investigated the interactions between BASC-2 outcomes and five descriptive variables in School A. Only one of the five descriptive variables showed a statistically significant interaction, lunch status. However, 32 of 41 students received a free reduced lunch (FRL) and nine paid full price (FP). The disparity in the small student sample calls into question the relevance and interpretability of the results. Therefore, the results are presented with caution.

Table 12 summarizes the main effects within subjects for FRL. The means and standard deviations for the pre- and post-intervention BASC-2 scores by lunch status are presented in Table 13. The main effect of the within subjects variable FRL was not statistically significant for Aggression ($F(1, 39) = .157, p = .694, \eta^2 = .004$), Hyperactivity ($F(1, 39) = .157, p = .619, \eta^2 = .006$), Externalizing Problems ($F(1, 39) = 1.514, p = .226, \eta^2 = .037$) and the Behavior Symptoms Index ($F(1, 39) = .023, p = .879, \eta^2 = .001$). The main effect within-subjects variable for Conduct Problems was significant using a critical alpha of .05 ($F(1, 39) = 4.376, p = .043$, partial $\eta^2 = .101$). The calculated effect size was very small indicating that a small proportion of Conduct Problems variance was accounted for by FRL. The BASC-2 mean T-scores (Table 13) for Conduct Problems indicate that the groups changed over time but in different ways. Specifically, students who paid full price demonstrated more Conduct Problems following intervention whereas students with FRL remained relatively consistent of over time. T-score classification for FRL and FP remained solidly within the average range.

Table 12

School A BASC-2 Outcomes and Free Reduced Lunch Interaction

	df	Mean Square	F	<i>p</i>	η
Aggression * FRL	1	3.367	.157	.694	.004
Hyperactivity * FRL	1	6.276	.251	.619	.006
Conduct Problems* FRL	1	52.643	4.376	.043*	.101
Externalizing Problems * FRL	1	17.507	1.514	.226	.037
Behavior Symptom Index * FRL	1	.705	.023	.879	.001

Note. FRL = free reduced lunch.

**p* < .05

Table 13

Summary of Means and Standard Deviations for BASC-2 Scores as a Function of Lunch Status

	Free Reduced Lunch ^a		Full Price ^b	
	<i>M</i> (<i>SD</i>)		<i>M</i> (<i>SD</i>)	
	2010	2011	2010	2011
Aggression	59.47 (10.95)	62.16 (9.53)	54.11 (10.82)	57.78 (8.64)
Hyperactivity	61.34 (12.65)	63.56 (11.39)	56.44 (14.59)	60.00 (15.44)
Conduct Problems	59.38 (9.08)	59.28 (8.88)	52.22 (7.93)	56.00 (9.23)
Externalizing Problems	60.78 (10.50)	62.44 (9.49)	54.56 (10.43)	58.44 (10.93)
Behavior Symptom Index	63.25 (11.03)	65.47 (8.80)	59.78 (14.80)	62.44 (11.92)

^a*n* = 32. ^b*n* = 9.

Two-way repeated measures analyses of variance (ANOVAs) analyzed interactions between BASC-2 outcomes and five descriptive variables in School B. Two

of five descriptive variables showed a statistically significant interaction, gender and legal involvement. However, the ratio of students involved with the legal system to those not involved (1:19) cannot be interpreted due to the considerable imbalance in the small sample. The gender ratio, on the other hand, of male to female (3:1) is included but interpreted with caution.

Table 14 summarizes the main effects within subjects for gender. The main effects of the within subjects variable was not statistically significant for Hyperactivity ($F(1, 18) = 4.040, p = .060, \eta^2 = .183$) or the Behavior Symptoms Index ($F(1, 39) = 4.120, p = .057, \eta^2 = .186$). The interaction was significant using a critical alpha of .05 for Aggression ($F(1, 18) = 6.439, p = .021, \text{partial } \eta^2 = .263$), Conduct Problems ($F(1, 18) = 9.120, p = .007, \text{partial } \eta^2 = .336$), and Externalizing Problems ($F(1, 18) = 7.233, p = .015, \text{partial } \eta^2 = .287$); however, the calculated effect sizes were small. The means and standard deviations for the pre- and post-intervention BASC-2 scores by gender are presented in Table 15. The BASC-2 mean T-scores for Aggression, Conduct Problems, and Externalizing Problems indicate that males and females changed over time but in different ways. Specifically, females demonstrated more behaviors of concern following intervention. In fact, T-score classification changed from ‘average’ to ‘at-risk’ (Aggression and Conduct Problems) and ‘average’ to ‘clinically significant’ (Externalizing Problems). Males showed decreases in maladaptive behaviors of over time. For example, T-score classification remained within the ‘clinically significant’ range for Aggression and Externalizing Problems. Conduct Problems, rated in the ‘clinically significant’ range on the pre-intervention measure, were re-classified as ‘at-risk’ on the post-intervention rating.

Table 14

School B BASC-2 Outcomes and Gender Interaction

	df	Mean Square	F	<i>p</i>	η^2
Aggression * gender	1	440.833	6.439	.021*	.263
Hyperactivity * gender	1	340.033	4.040	.060	.183
Conduct Problems* gender	1	480.000	9.120	.007*	.336
Externalizing Problems * gender	1	480.000	7.233	.015*	.287
Behavior Symptom Index * gender	1	270.000	4.120	.057	.186

**p* < .05

Table 15

Summary of Means and Standard Deviations for BASC-2 Scores as a Function of Gender

	Male ^a		Female ^b	
	<i>M</i> (<i>SD</i>)		<i>M</i> (<i>SD</i>)	
	2010	2011	2010	2011
Aggression	74.00 (20.90)	71.87 (18.03)	55.80 (15.80)	69.00 (15.81)
Hyperactivity	75.67 (17.36)	73.20 (15.98)	59.00 (17.56)	70.00 (15.75)
Conduct Problems	70.33 (16.26)	65.73 (14.35)	58.20 (11.28)	69.60 (10.29)
Externalizing Problems	75.07 (18.60)	71.87 (15.87)	58.20 (15.66)	71.00 (13.78)
Behavior Symptom Index	75.67 (19.81)	76.47 (16.85)	61.60 (18.99)	74.40 (12.16)

^a*n*= 15. ^b*n*=5.

Summary

This chapter presented the demographic data from the samples of School A and School B and the results of the statistical analyses. The four research questions were

addressed through analyses of two archival data sets. The analyses used in this study included frequency comparisons, Wilcoxon Signed Ranks Tests, a paired-samples *t*-test, and two-way repeated measures analyses of variance (ANOVAs). The discussion relative to the analyses is presented in Chapter 5.

CHAPTER 5

DISCUSSION

Introduction

Previous chapters provided an introduction to this study, presented and synthesized relevant literature to the study, described the methodology employed, and presented the results of the quantitative analyses. In this final chapter, the findings of the study are interpreted and summarized in light of current research and literature, the limitations and delimitations of the project are acknowledged, and future implications of this study are discussed.

Restatement of the Problem

Research studies show that school staff frequently lack advanced training regarding effective behavioral interventions (Walker, Nishioka, Zeller, Severson, & Feil, 2000) that are crucial for the prevention of eruptions commonly manifested by children with severe behavioral problems (Merrell & Walker, 2004; Ryan, Peterson, Tetreault, & Vander Hagen, 2007a). Costenbader and Reading-Brown (1995) noted that educators often resort to increasingly restrictive procedures on the continuum of behavior reduction techniques to manage physical aggression (Crocker, Stargatt, & Denton, 2010; Ryan & Peterson, 2004), self injurious behavior, or even the relatively benign circumstances of noncompliance (Ryan & Peterson, 2004). In fact, when traditional behavior interventions are unsuccessful and staff lack emotional disturbance (ED) specific, evidenced-based behavioral practices in their instructional repertoire, resorting to restrictive practices such as seclusion and restraint (S/R) is a relatively common practice. However, an exhaustive search of the literature failed to reveal studies showing that S/R are effective methods for

reducing externalizing behaviors or improving outcomes for students classified as ED (Busch & Shore, 2000). Continued use of ineffective, potentially harmful practices speaks to the fundamental need for school-based initiatives which entail scientifically proven methods (Greene, Ablon, & Martin, 2006; Kam, Greenberg, & Kusche, 2004). Consequently, it is crucial that teachers who work with students classified with ED are well trained and supported by means of frequent and rigorous professional development programs.

This research study evaluated the impact of a scientifically-proven alternative to the use of restrictive procedures (S/R) for managing challenging student behavior such as aggression, noncompliance and disruption. Specifically, through review of archival data, this project assessed whether staff training in the Collaborative Problem Solving (CPS) model which emphasized positive behavior management and de-escalation of aggression, effectively decreased student aggression and reduced the number of S/R procedures performed on students.

Restatement of the Research Questions

Specific research questions following implementation of the CPS model included, were there (a) fewer behavioral infractions including physical aggression/fighting, noncompliance/disrespect, and disruption; (b) a reduction in externalized behavior as measured by a standardized behavior rating scale; and (c) fewer and shorter periods of seclusion (time-out level 3) and restraint events? Additionally, this study sought to determine if there was an interaction between the externalized behavior as measured by a standardized behavior rating scale and the variables of prescribed psychotropic

medication, participation in community mental health services, involvement with the legal system, eligibility for free reduced lunch, and gender.

Findings and Interpretations

The findings and interpretations of the research questions will be organized relative to the order of presentation in Chapter Four. Following examination of the research questions, it is necessary to address implementation fidelity of the CPS model in School A and School B since the outcomes were affected by the staff's reception of the model, the building administrator's commitment to the implementation components, and ultimately the model's implementation reliability.

Research Question 1

After implementation of the CPS model, were there fewer behavioral infractions of physical aggression, noncompliance, and disruption? These behaviors were selected to be analyzed because aggression, noncompliance, and disruptive verbalizations are the most commonly recognized behaviors associated with ED (Dunlap & Childs, 1998; Epstein & Saltzman-Benaiah, 2010) and the CPS model was predicated on the fundamental goals of reducing challenging behavior (Greene & Ablon, 2006). This question was examined through a frequency comparison and the Wilcoxon Signed Ranks Test. The results of this analysis support implementation of the CPS model as contributing to the decrease in incidents of aggression, noncompliance, and disruption.

School A.

The frequency comparison of behavioral infractions at School A revealed a reduction in events of physical aggression and noncompliance; however there was a slight increase in the incidents of disruption. The Wilcoxon Signed Ranks Test results

showed that implementation of the CPS model in School A did not elicit statistically significant changes in incidents of aggression, noncompliance or disruption. The results revealed that the number of behavioral infractions did not change for the majority of students from one year to the next. In effect, the reductions and increases could be attributed to a small group of students.

School B.

The frequency comparison of behavioral infractions at School B revealed a marked decrease in the incidents of physical aggression and noncompliance, and a slight decrease in incidents of disruption. In School B there was a statistically significant decrease in the incidents of aggression following implementation of the CPS model. Nearly half of the sample population showed decreases in the number of aggressive incidents. However, the model did not elicit statistically significant changes in incidents of noncompliance or disruption.

Research Question 2

After implementation of the CPS model, was there a reduction in externalized behavior as measured by a standardized behavior rating scale? This question was explored through a paired-samples *t*-test. A standardized measure of externalizing behaviors was included because few studies have empirically validated children's aggression with a reliable instrument (Damen, 2009) and this is a shortcoming identified in the psychiatric literature (Martin, Krieg, Esposito, Stubbe, & Cardona, 2008). However, no evidence was found in this study to support that, as a result of the CPS model, there was a reduction in externalizing behaviors as measured by the BASC-2. The mean pre-intervention and post-intervention T-scores for Hyperactivity, Aggression,

Conduct Problems, Externalizing Behavior Problems and overall Behavior Symptoms Index (BSI), actually increased on all measures for both schools. It was anticipated that decreases on externalizing behaviors scales would be evident after intervention (Reynolds & Kamphaus, 2004); consequently, these results were unexpected. Unfortunately, the findings of this analysis cannot be compared with other studies because those seclusion and restraint inquiries which included a standardized measure of externalizing behaviors were not associated with the implementation of the CPS model. Three reasons are offered in the following paragraphs which might explain the increases in BASC-2 scores.

First is the phenomenon of ‘extinction burst’ and ‘extinction-induced aggression’ which are two common outcomes of behavior reduction intervention. The former is defined as a temporary increase in the frequency, intensity or duration of the behaviors targeted for change (Cooper, Heron, & Heward, 1985, as cited by Lerman & Iwata, 1995), while the latter is defined in basic terms as an increase in aggression (Lerman, Iwata, & Wallace, 1999). In other words, behavior tends to get worse before it gets better. However, if extinction burst was the source of the mean standard score increases, it is likely that the ADR data would have revealed increases in the frequency of behavioral incidents that would mirror the severity of the externalizing behaviors measured on the BASC-2. Instead, ADR data generally showed that aggression, noncompliance and disruption decreased following intervention and, in some instances, the decreases were significant.

Second, teacher burnout is proposed as a potential contributing factor to the increased BASC-2 scores. Students with ED present with a complex mix of behavioral, emotional, and educational difficulties (Reddy & Richardson, 2006) which can quickly

deplete teachers of essential affective resources. According to Osher, Osher, and Smith (1994) (as cited by Reddy & Richardson, 2006), teaching students with ED is a significant challenge for today's educators. Various studies have established that an association exists between stress and teacher burnout (Schnorr, 1995). Armed with this research, it is plausible that by the end of the school year, teachers have exhausted their emotional resources and might possess a negative bias toward challenging students. The post-intervention BASC-2 scores might reflect an end-of-year lack of enthusiasm and emotional exhaustion.

The third possible explanation for increased BASC-2 scores is that staff reactions to challenging behaviors changed through implementation of the model, as evidenced by ADR data, but students did not improve emotional control, as suggested by BASC-2 data. The CPS model includes two critical components, assessment and intervention. The assessment factor is strongly connected to modifying student maladaptive behavior. For example, identifying the child's specific cognitive deficits underlying maladaptive behaviors and directly teaching those thinking skills improves student emotional regulation (Greene & Ablon, 2006) and adaptive behavior skills. The increased BASC-2 scores may be an indication that emotional regulation was not adequately addressed through direct instruction. The design of this study focused on fidelity of implementing the "Plan B" approach but did not include a mechanism for monitoring direct instruction of lagging skills (Greene & Ablon, 2006; Greene, 2009). Without evidence of targeted instruction, it cannot be assumed that full implementation of the model occurred.

School A.

The Aggression and Externalizing Problems mean T-scores as measured by the BASC-2 increased from an 'average' to an 'at-risk' score classification. Hyperactivity, Conduct Problems, and the BSI remained in the original classification (at-risk, average, and at-risk, respectively). The increases from pre- to post-intervention mean T-scores according to the Wilcoxon results were significant for Hyperactivity, Aggression, and Externalizing Behavior Problems. The mean T-score differences for conduct problem and the BSI were not statistically significant.

School B.

The five clinical scales showed increases in all mean T-scores; however only the BSI changed score classification from an 'at-risk' to a 'clinically significant' classification. Hyperactivity, Aggression, Conduct Problems, and Externalizing Problems, remained in the at-risk range. Statistically, no significant difference from pre-intervention to post-intervention was found for Hyperactivity, Aggression, Conduct Problems, externalizing behavior problems, or the BSI.

Research Question 3

After implementation of the CPS model, were there fewer events and shorter periods of seclusion and physical restraint? Frequency comparisons and the Wilcoxon Signed Ranks Test were conducted using aggregate seclusion and restraint ADR incidents from the 2009-2010 and 2010-2011 school years. The results of the analysis provided evidence of desirable changes in restraint practices, particularly in School B. The changes in seclusion practices following implementation of the CPS model was less impressive but the change is consistent with the conclusions of Martin et al. (2008) who

found that decreases in restrictive events were more pronounced for use of restraints than for use of seclusion.

School A.

School A generally showed negligible changes in the frequency comparisons of seclusion and restraint following implementation of the CPS model. The Wilcoxon analysis established no significant difference for the total number of seclusion or restraint incidents and did not yield valuable data relative to duration of S/R for interpretation.

School B.

School B showed minimal change in seclusionary procedures after implementation of the model in the total number of seclusion incidents (21 decreased to 19), seclusion lasting less than 5 minutes was reduced by more than half (14 to six events). Increases were noted in the duration of all seclusion events lasting over five minutes, with the largest increase in the number of seclusions lasting between six and 10 minutes. The Wilcoxon Signed Ranks Test revealed no significant difference for the total number of seclusion incidents and the duration of incidents were not interpretable.

The most notable changes occurred in the frequency and duration of restraint practice at School B. There was a 68 percent decrease in the total number of restraint events reported following implementation of the CPS model. The number of restraints lasting less than five minutes and the number of restraints lasting six to 10 minutes decreased by 69 percent and 75 percent, respectively. While encouraging but less remarkable, post-intervention data revealed fewer restraints lasting over 11 minutes (ten incidents reduced to five). The Wilcoxon analysis revealed a statistically significant difference in the total number of incidents of restraint, restraints lasting less than five

minutes, the number of restraints lasting between six and 10 minutes, and the number of restraints lasting more than 15 minutes. Further examination revealed that the majority of students showed decreases in the frequency and duration of restraint.

Research Question 4

Was there an interaction between the Behavior Assessment Scale for Children-2 (BASC-2) outcomes (Hyperactivity, Aggression, Conduct Problems, Externalizing Problems and the BSI) and the variables of gender, eligibility for free reduced lunch, psychotropic medication, participation in community mental health services, and involvement with the legal system?

Two-way repeated measures analyses of variance (ANOVAs) investigated the interactions between BASC-2 outcomes and five descriptive variables. Three of the descriptive variables were identified through the literature review and typical of the sample populations. For example, identification rates are lower for females than males (U.S. Department of Education, 1994), approximately one in 10 students are involved in the criminal justice system (Cook et al., 2008), and over 30 percent live below the national poverty level (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). The other two variables, psychotropic medication and involvement with community mental health services, while not specifically addressed in the literature, were judged to be especially relevant to the student populations in School A and B. The small sample sizes and disproportionality within the descriptive variables rendered interpretation questionable. Nonetheless, the description is presented for consideration. However, the results will not be included in the summary.

School A.

The calculated effect size for School A was very small indicating that a small proportion of Conduct Problems variance was accounted for by lunch status. The two groups, students eligible for free reduced lunch and students who paid full price, changed over time but in different ways for Conduct Problems. Students who paid full price demonstrated more Conduct Problems following intervention whereas students eligible for a free reduced lunch remained relatively consistent over time. Despite the changes, T-score classification for both groups remained solidly within the average range and therefore the results are not considered to be of great consequence.

School B.

The BASC-2 mean T-scores for Aggression, Conduct Problems, and Externalizing Problems indicate that males and females changed over time but in different ways. Specifically, females demonstrated more behaviors of concern following intervention while males showed slight decreases in maladaptive behaviors of over time. Investigation of the females' pre- and post-intervention BASC-2 revealed that five females were included in the sample. The significant increases in BASC-2 scores were attributed to two students who had solidly 'average' pre-intervention scores but 'clinically significant' scores at post-intervention screening. In effect the scores doubled over time indicating drastic changes in emotional functioning that were beyond the scope of the emotional support program.

Implementation Fidelity

As described in Chapter Three, following an administrative discipline referral that involved S/R, the educator was expected to complete a Proactive Plan B worksheet with

the student which targets the problem behavior that resulted in an ADR. Fidelity of implementation was monitored by matching an ADR that resulted in S/R with a subsequent Proactive Plan B sheet, at least eight out of ten times. School A documented a total of 28 seclusion incidents and nine restraints at the conclusion of the 2010-2011 school year. Even though the building administrator in School A verbally assured that the model was put into practice, no Plan B sheets accompanied ten randomly selected ADR referrals. Review of the ADR data from School B revealed a total of 19 seclusion events and 23 restraints. School B showed evidence that nine out of ten randomly selected ADR forms matched a Plan B sheet. The absence of supportive documentation in School A suggests that there may have been resistance to the new initiative (Lohrmann, Forman, Martin, & Palmieri, 2008; Mohr, Martin, Olson, Pumariega, & Branca, 2009) and calls into question the integrity of implementation. It is a verified phenomenon in education settings that staff clings to familiar procedures despite exposure to alternatives that have proven successful (Mohr et al., 2009). Without documentation of each incident as a data point, it is impossible to monitor emerging programmatic trends and make informed adjustments to practice. Accountability ensures that evidence, not habit, will influence which intervention is used (Busch & Shore, 2000).

Other informal safeguards to implementation fidelity were also examined: monthly ADR data, attendance sheets, agendas and discussion notes for after-school CPS meetings, and spot review of Proactive Plan B worksheets by building administrators. All after-school sessions at School A were attended by approximately twenty-seven staff members. However, CPS meetings were held sporadically (once every three to four weeks) and were included as a line item on a general staff meeting agenda. School B

consistently had four teachers attend 30-minute, biweekly after-school sessions devoted solely to CPS and review of Proactive Plan B worksheets at each meeting. Systematic debriefing sessions are critical to the CPS process as a safeguard to implementation drift (Mordock, 2002), the tendency to revert to old habits and procedures over time (Busch & Shore, 2000). These sessions inform the administrator the extent to which staff are incorporating new practices and ideas into their daily work (Petti, Mohr, Somers, & Sims, 2001). Therefore, lack of consistently scheduled CPS debriefing sessions in School A is troublesome.

Summary

From an organizational perspective, any decreases in incidents of aggression, noncompliance and disruption, as well as frequency and duration of seclusion and restraint are considered to be a remarkable accomplishment. So, in this regard, the CPS model was judged to be a successful intervention in School A and B. From a statistical perspective, the CPS model was found to have a significant effect only on aggression and restraint procedures in School B. However, since these were the primary areas targeted for change, it is safe to claim that the CPS model was an effective intervention for School B.

Although the purpose of this study was not to draw a comparison of School A to School B, salient performance differences were evident between the sites. The divergence is likely attributable to implementation fidelity. For example, School B devoted a period of time nearly every other week to CPS discussion and maintained documentation to demonstrate implementation. School A on the other hand, did not follow the standard procedural guidelines established prior to implementation of the

model. The question then became, was substandard implementation a result of resistance to the model or deficiency in the skills necessary to implement the model? Either way, responsibility falls on the building administrator to identify the cause and make the necessary programmatic changes.

The implementation variance in the two sites emphasizes the importance of the building administrator to programmatic change. Strong and effective leadership is a key factor in the successful initiation and maintenance of a new program (Bower & McCullough, 2000) otherwise teachers will revert to pre-established habits of practice (Cook, Landrum, Tankersley, & Kauffman, 2003). It is the responsibility of the building administrator to routinely schedule meetings, develop the agenda, and pursue staff accountability so that evidence-based policies and procedures are embraced and implemented with fidelity (Ryan, 2009). School A apparently did not have the level of commitment to the model expected of the building administrator.

Finally, the results of the pre- and post-intervention BASC-2 scores, while unexpected, were not judged to detract from the overall outcome of the study. The analysis provided an additional component to the CPS model, one that had not been previously explored. Although possible reasons for the consistent increases in externalizing behaviors were speculated, the results provide an opportunity for further inquiry into student maladaptive behaviors in response to the CPS model.

Limitations to the Study

The most obvious limitation of this study includes external validity, or the generalizability of findings to a larger group. The number of cases is too limited for broad generalizations since there were only 41 students in School A and 17 students in

School B who participated in the complete study. In addition to sample size, the homogeneous racial composition of the sample (nearly 100 percent Caucasian) is contrary to national research indicating that over 50 percent of the ED population is African American (Wagner et al., 2005). Finally, the selection of a segregated, private school setting with high rates of restraint and seclusion may affect the generalizability of the findings to general public school settings.

The second limitation has to do with the use of archival data for analysis. Archival data does not reveal the continuum for practice. For example, pre-existing data does not describe the sequence of events leading to a seclusion or restraint incident. Understanding the progression of interactions leading to disciplinary procedures would provide a richer description of what is actually occurring in the classroom setting.

Delimitations of the Study

The delimitations of this study were the conscious exclusionary and inclusionary decisions that were made. First, including only the BAC-2 externalizing behaviors scales was a choice made to regulate and manage the scope of this study. The decision was based upon the behaviors reported to be most likely impacted by the CPS model. Additionally, cases with BASC-2 validity indexes in the 'caution' and 'extreme caution' ranges were corroborated with ADR data then considered for removal. Next, archival behavioral ADR data was screened for cases with unusual or extreme values (Mertler & Vannatta, 2010); however, outliers from this data set were not removed. The decision for maintaining these cases was based upon the student population who, by nature of their classification, demonstrate anomalous behavioral excesses. Finally, one teacher and all of

her rostered students were removed from the data analysis because refusal to implement the CPS model nullified the students' pre- and post-intervention data points.

Implications for Future Research

As this study progressed and the existing data were analyzed, implications for future research became apparent. Following are possible ways to enhance the research process in the future:

1. The sample size, racial homogeneity of the population, and segregated site indicate a need for further empirical evaluations allowing for greater generalizability.
2. In addition to the externalizing behaviors scales, using other scales from the BASC-2, such as the internalizing behaviors scales, the adaptive behaviors scales, the school problems scales, and the supplemental content scales, might provide a more comprehensive profile of the student following implementation of the CPS model and show more distinctive changes in student behavior.
3. To counterbalance possible teacher end-of-year 'burnout', using the other components of the BASC-2 scales (student self report and the parent rating scale) might reveal changes in student behaviors and perceptions that were not acknowledged on the teacher rating scale.
4. Inclusion of additional data, such as the Pennsylvania State Standards Assessment (PSSA) scores, in the data analyses could help ascertain whether implementation of the CPS model has an effect on academic achievement.
5. Including the teacher/staff perceptions of the intervention model before, during, and after implementation would help identify the barriers and elements critical to

- successful implementation. This could be achieved through surveys, questionnaires or interviews.
6. This study design is amenable to a longitudinal perspective that would document trends and patterns over time.

Implications for Practice

The literature supports the need to translate evidenced-supported initiatives into practice with implementation fidelity. This study provides, to an extent, a roadmap that outlines the obstacles to improvement, delineates areas for improvement, and highlights the practices that contributed to successful implementation. To this end, implications for practice are discussed upon three central themes that emerged during the study: staff training and support, fidelity of implementation, and leadership.

Staff training

Implementation of the CPS model required a high quality, targeted training plan that realistically considered fiscal constraints, time management, human resources and procedural safeguards. Providing short, focused professional development seminars that incorporated theoretical underpinnings of the model, video examples, modeling of the plan components, and guided practice provided staff with the intensive support necessary to implement the plan with confidence. On-going intensive, supervised experiences and collegial support was considered vital to address competency as well as staff emotional well-being. Once the administrative commitment was obtained, designing and providing the CPS training was a relatively unencumbered process.

Fidelity of implementation

Fidelity checks were incorporated into the training plan but upon completion of the study, glaring inadequacies in the design became evident. Safeguards to ensure implementation of the Emergency and Proactive Plan B components of the CPS model were put into place. However, there were no provisions to ensure that building administrators provided the support necessary for staff to adopt and implement the model with fidelity. For example, the administrator was responsible for scheduling bi-weekly debriefing sessions. The literature supported the use of a systematic debriefing process to prevent implementation drift and create opportunities for staff to reflect and dialogue on their own behavior. In the case of School A, teachers resistance to implementation might have been recognized and managed prior to the conclusion of the school year. The administrator was also responsible for ensuring that staff completed necessary documentation following a seclusion or restraint incident. Research indicates that documentation promotes programmatic evaluation and allows for exploration of treatment effectiveness. Without records of implementation, subjectivity and opinion guide programmatic decisions. The study also revealed that direct instruction in thinking skill deficits was assumed to be addressed in the student's Individual Education Program plan (IEP). In retrospect, including a review of student progress monitoring in the IEP might have ensured that student skill deficits were being included as an instructional goal. Therefore, in addition to including safeguards to assure administrator accountability, adding a fidelity check of lagging skill direct instruction would be recommended.

Leadership

Through this study, management philosophy and leadership are appreciated as key factors in the initiation and maintenance of the CPS model. Introducing new practices is not enough to motivate staff toward change and reform. Strong commitment to change must flow from administrators who continually challenge staff to improve daily practice and enthusiastically implement evidence-based policies and procedures.

Clearly this study implicates the role of the supervisor as the critical influence on fundamental change. However, the challenge is to address the practical implications of this issue. How does an organization ensure that new concepts and behaviors are woven into the culture of a system? In hindsight, perhaps the building administrator lacked a clear understanding of the organizational expectations. An administrative overview which clearly defines the responsibilities of the leader would present an avenue to ameliorate this error. The specific leadership functions identified as missing from School A included environmental monitoring, organizing staff activities, teaching and coaching staff, motivating staff, and intervening actively in the group's work (Klein, Zeigert, Knight, & Xiao, 2006). Had the building administrator performed these tasks, the outcomes in School A may have been much different. For example, the teacher who refused to implement the model might have been confronted early in the process, the teachers who didn't complete documentation might have been required to do so, and debriefings might have occurred regularly and viewed as a valuable tool for program improvement.

Conclusions

It is critical that educational organizations develop systems of service delivery that allow students to access appropriate educational services despite their significant emotional and behavioral problems. This study revealed that when implemented with fidelity under the guidance of a capable leader, the model successfully reduced aggression, noncompliance, and disruption, as well as incidents and duration of seclusion and restraint. The Collaborative Problem Solving (CPS) model was proven to be a promising pre-emptive approach that offered educators an instructional and behavior management technique beyond those covered in general coursework and generic behavior management seminars. Empirically measuring the effects of this evidenced-based model was critical to determining whether to continue implementation of the model and identifying programmatic and individual barriers to implementation. It is hoped that the results of this study contribute to the research of students classified as ED who present educators with unique academic and behavior challenges. Additionally, it is hoped that that the information provided will help create better learning environments for students classified as ED and the teachers with whom they work.

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Appendix A

Administrative Discipline Referral Form

Administrative Discipline Referral Form

Student(s) _____ Referring Staff/Teacher _____
 Supervisors Signature _____ Grade Level _____ Time of Infraction _____
 Director of Special Ed. Signature _____ Program _____
 Date _____ Building Location _____

Location

- | | | |
|--|--|--|
| <input type="checkbox"/> Bathroom/Restroom | <input type="checkbox"/> Hallway/Breezeway | <input type="checkbox"/> Parking Lot |
| <input type="checkbox"/> Bus Loading Zone | <input type="checkbox"/> Library | <input type="checkbox"/> Playground |
| <input type="checkbox"/> Cafeteria | <input type="checkbox"/> Locker Room | <input type="checkbox"/> Special Event/Assembly/Field Trip |
| <input type="checkbox"/> Classroom | <input type="checkbox"/> Off Campus | <input type="checkbox"/> Stadium |
| <input type="checkbox"/> Commons/Common Area | <input type="checkbox"/> Office | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Gym | <input type="checkbox"/> On Bus | <input type="checkbox"/> Other _____ |

Problem Behaviors/Infraction (check the most intrusive)

MAJOR

- | | | |
|--|---|---|
| <input type="checkbox"/> Abusive/Inapp/Profane Lang. | <input type="checkbox"/> Drugs | <input type="checkbox"/> Skip Class/Tuancy |
| <input type="checkbox"/> Alcohol | <input type="checkbox"/> Fighting/Physical Aggression | <input type="checkbox"/> Tardy |
| <input type="checkbox"/> Arson | <input type="checkbox"/> Forgery/Theft | <input type="checkbox"/> Technology Violation |
| <input type="checkbox"/> Bomb Threat/False Alarm | <input type="checkbox"/> Gang Affiliation Display | <input type="checkbox"/> Tobacco |
| <input type="checkbox"/> Combustibles | <input type="checkbox"/> Harassment/Bullying | <input type="checkbox"/> Weapons |
| <input type="checkbox"/> Defiance/Insubordination/ | <input type="checkbox"/> Inappropriate Display of Affection | <input type="checkbox"/> Unknown |
| Disrespect/Non-compliance | <input type="checkbox"/> Inappropriate Location/Out of Bounds | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Disruption | <input type="checkbox"/> Lying/Cheating | |
| <input type="checkbox"/> Dress Code Violation | <input type="checkbox"/> Property Damage | |

Possible Motivation

- | | | |
|---|--|--------------------------------------|
| <input type="checkbox"/> Avoid Adults | <input type="checkbox"/> Obtain Adult Attention | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Avoid Peer(s) | <input type="checkbox"/> Obtain Items/Activities | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Avoid Tasks/Activities | <input type="checkbox"/> Obtain Peer Attention | |

Others Involved/Social Interaction (include names of those involved)

- | | | |
|--|---|----------------------------------|
| <input type="checkbox"/> None | <input type="checkbox"/> Substitute _____ | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Peer(s) _____ | <input type="checkbox"/> Teacher(s) _____ | |
| <input type="checkbox"/> Staff _____ | <input type="checkbox"/> Other _____ | |

Administrative Decision/Consequence

- | | | |
|---|---|--|
| <input type="checkbox"/> Bus Suspension | <input type="checkbox"/> Parent Contact | <input type="checkbox"/> Time Out Level _____
of Minutes _____
Time In _____
Time Out _____ |
| <input type="checkbox"/> Conference With Student | <input type="checkbox"/> Restitution | |
| <input type="checkbox"/> Expulsion | <input type="checkbox"/> Detention | |
| <input type="checkbox"/> Individualized Instruction | <input type="checkbox"/> Time In Office | |
| <input type="checkbox"/> In-School Suspension # of Days _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Out-of-School Suspension # of Days _____ | <input type="checkbox"/> Police Called (name of department) _____ | |
| <input type="checkbox"/> Loss of Privilege | <input type="checkbox"/> Arrested Student | |

☐ Safety Mechanics

- Technique _____
 # of staff involved in restraint _____
 Names and titles of staff members involved
☐ Supervisor _____
☐ Teacher _____
☐ School Psychologist _____
☐ Paraprofessional _____
☐ TSS/Wraparound _____
☐ Other _____
 # of Minutes _____
 Time In _____ Time Out _____
☐ Type of injury to:
☐ Student _____
☐ Staff _____
☐ Student referred to law enforcement

Date Parent Notified _____

Date IEP Team Meeting Held _____
 IEP team meeting held within 10 school days of restraint
☐ Yes ☐ No

Date IEP Waiver Signed by Parent _____

- ☐ Waiver not signed or returned by parent
 Considerations and discussions during IEP meeting
☐ FBA
☐ Reevaluation
☐ New Behavior Support Plan
☐ Revised Behavior Support Plan
☐ Change of Placement

Restraints listed in IEP
☐ Yes ☐ No

For Office Use Only
 Date injury reported to BSE _____

REPORTING OF INJURY IS MAXIMUM
OF 3 SCHOOL DAYS FROM INCIDENT

Revised June 2010
Reviewed for 2010/2011

Appendix B

Proactive Plan B Tracking Sheet

Proactive Plan B Tracking Sheet

Today's Date: _____

Child's Name: _____

Date of ADR Referral: _____

Adult(s) Taking Lead: _____

Key Lagging Skills:

- 1.
- 2.
- 3.

Key Triggers:

- 1.
- 2.
- 3.

Problem Being Addressed:

--

Student Concern(s):

--

Adult Concern(s):

--

Potential Solutions:

<div>1.</div> <div>2.</div> <div>3.</div> <div>(Circle solution being attempted)</div>	<div>Revisit Date:</div> <div>Problem Solved? Y N</div> <div>Next Step(s):</div>
--	--

Appendix C

Copyright Permission for BASC-2 Tables

Clinical Assessment
19500 Bulverde Road
San Antonio, TX 78259
Telephone: 210-339-5345
Fax: 210-339-5059
Pas.licensing@pearson.com



August 23, 2011

Sent via Email to: glew3@zoominternet.net

Duquesne University, Pittsburgh
C/o Mrs. Beth Glew, Doctoral candidate student
5230 Elliott road
Butler, PA 16001

Re: *Behavior Assessment System for Children, Second Edition (BASC™-2)* (the "Product")

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Senior Licensing Specialist

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Appendix D

Permission to Include Proactive Plan B Tracking Form

*From: "Beth Edelstein" <XXXXXXXX@comcast.net>
To: <glew3@zoominternet.net>
Received: Wed 11/30/11 3:17 PM
Subject: follow-up re: your dissertation
Priority: Normal*

Hi Beth:

So sorry for the delay in replying to you. I did check with Dr. Ablon and he was fine with your including Proactive Plan B in your appendix. We would love to see the results of your study and hope you will share when complete.

Wishing you all the best!

***Beth Edelstein, OT/L**
Director of Outreach, Think:Kids
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